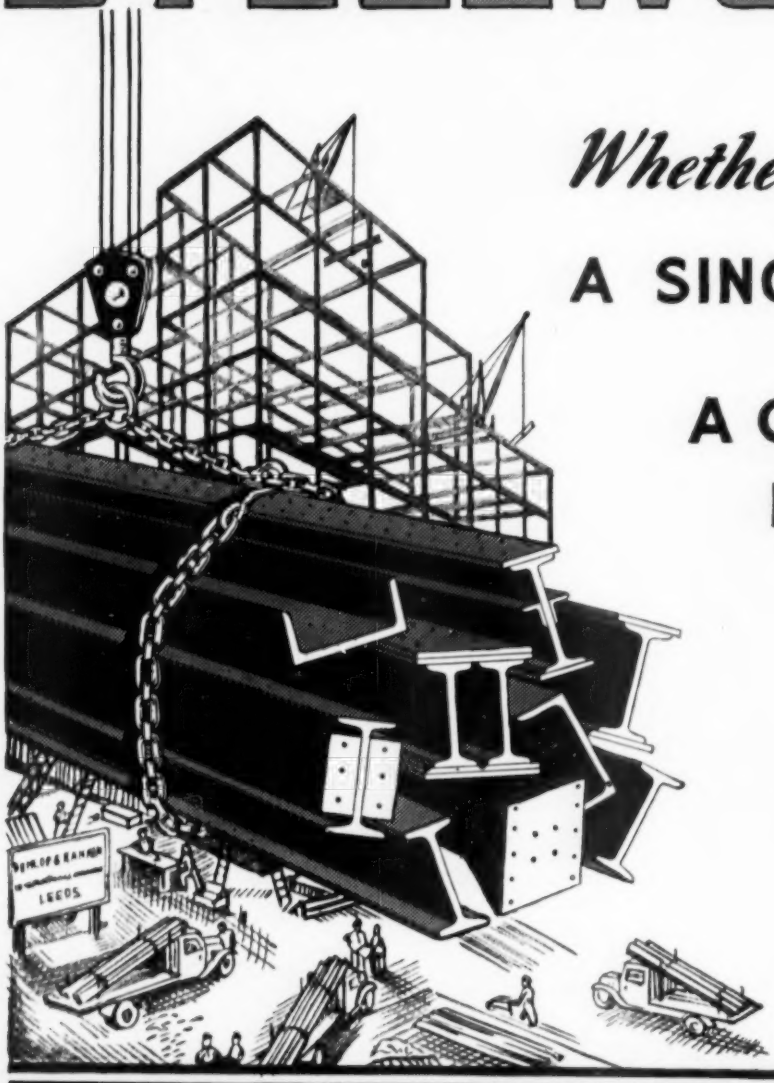
THE ARCHITECT & BUILDING NEWS

21 OCTOBER 1954 · VOL. 206 · NO. 17 · ONE SHILLING WEEKLY

Centenary Number

STEELWORK



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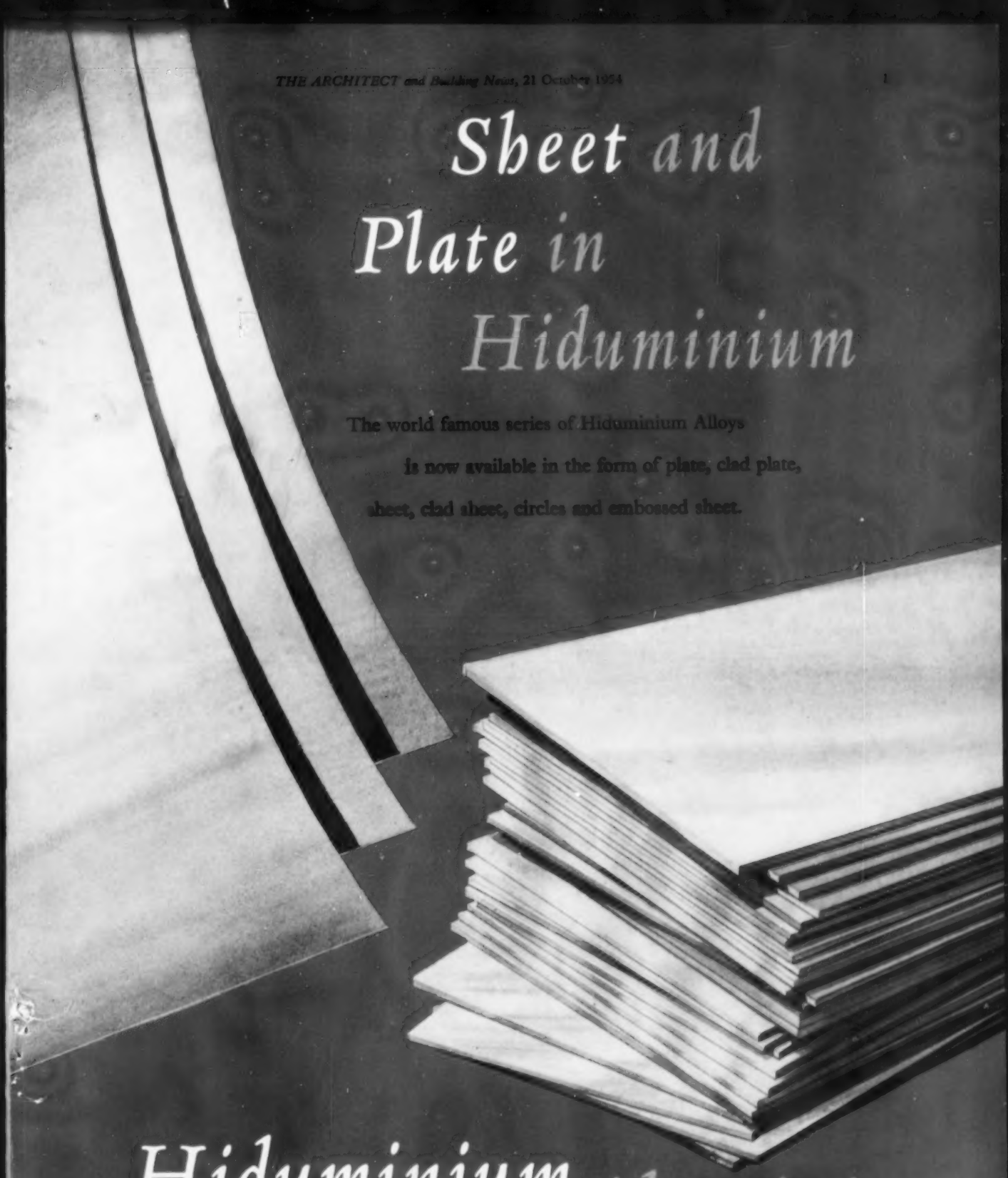
LEEDS

TELEGRAMS "SECTIONS LEEDS"

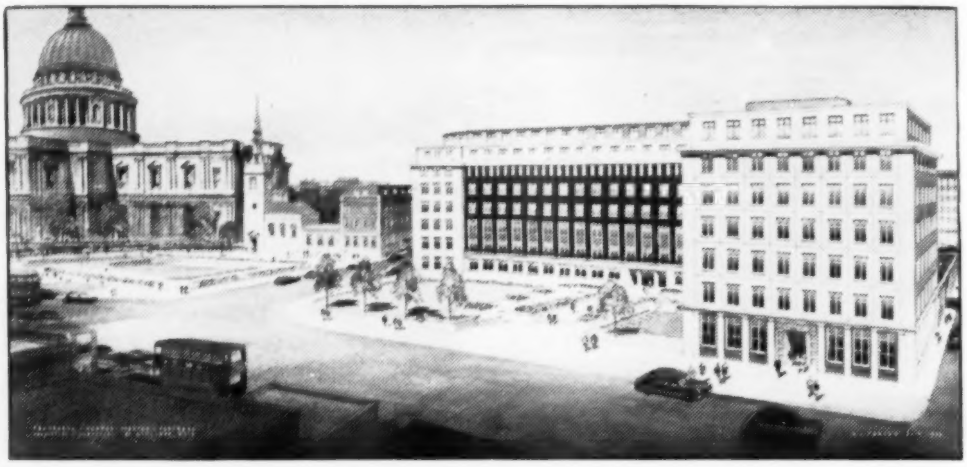
Sheet and Plate in Hiduminium

The world famous series of Hiduminium Alloys is now available in the form of plate, clad plate, sheet, clad sheet, circles and embossed sheet.



Hiduminium makes the most of Aluminium

HIGH DUTY ALLOYS LIMITED · SLOUGH · BUCKS



RE-BUILDING

For nearly two centuries Trollope & Colls Ltd. have been entrusted with the construction of many important banking and commercial buildings in the City of London.

Today the tradition of fine craftsmanship so proudly maintained is reflected in their significant contribution towards rebuilding the City.

OTHER IMPORTANT CITY CONTRACTS IN HAND:

THE GUILDHALL and CIVIL DEFENCE CENTRE.	*Architects: Sir Giles Scott, Son & Partner, F.R.I.B.A.*
THE LONDON ASSURANCE, King William Street, E.C.	*Architects: Whinney, Son & Austen Hall, F.R.I.B.A.*
THE COMMERCIAL BANKING COMPANY of SYDNEY, LTD., Old Jewry, E.C.	*Architects: Waterhouse & Ripley, F.F.R.I.B.A.*
THE PHOENIX ASSURANCE COMPANY, LTD., King William Street, E.C.	*Architects: Messrs. Seth-Smith Monro & Matthew, L.R.I.B.A.*
THE NORTHERN ASSURANCE COMPANY LTD., Moorgate, E.C.	*Architects: Messrs. Troup & Steele, F.R.I.B.A.*
DAILY EXPRESS NEWSPAPER BUILDING—Extensions	
DAILY NEWS BUILDING—Extensions	
MORNING ADVERTISER	*Architects: Ellis, Clarke & Gallannaugh, F.R.I.B.A.*
GRAY'S INN HALL, Gray's Inn, W.C.	*Architect: Sir Edward Maufe, F.R.I.B.A.*
WATLING HOUSE, Cannon Street, E.C.	
ST. BARTHOLOMEW'S HOSPITAL, Forest Hall Place	*Architects: Messrs. Easton & Robertson, F.F.R.I.B.A.*
THE DUTCH CHURCH, Austin Friars, E.C.	*Architects: Messrs. Ansell and Bailey.*
OFFICES—8/13, Chiswell Street, E.C.	*Architects: Gordon & Gordon, F.R.I.B.A.*
LONDON WALL BUILDINGS	*Architect: Clifford Strange, L.R.I.B.A.*
ROYAL LONDON HOUSE	*Architect: H. Bramhill, F.R.I.B.A.*

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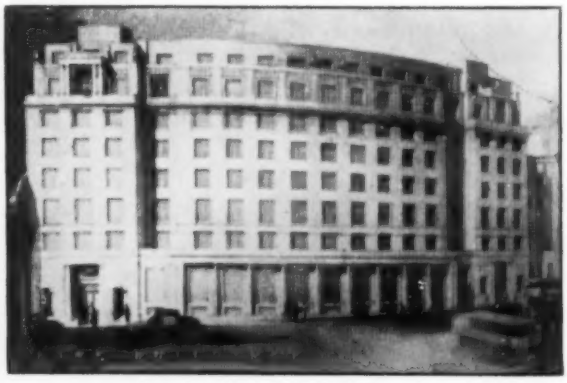

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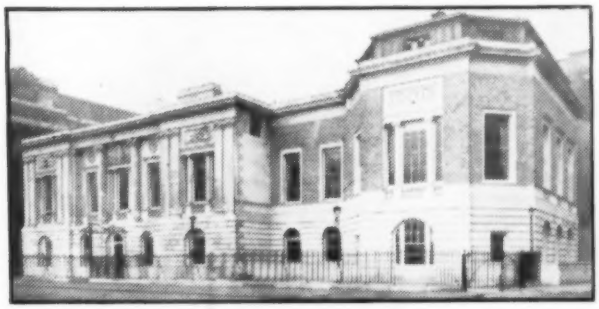


3

THE CITY.....

6

NEW BUILDING, WATLING STREET, E.C.
Architects:
1 Messrs. Trehearne & Norman Preston & Partners, F.R.I.B.A.

TRINITY HOUSE.
Architects:
2 Messrs. Richardson & Houfe, F.F.R.I.B.A.

THE BANK OF LONDON & SOUTH AMERICA, LTD.
Architect:
3 Victor Heal, Esq., F.R.I.B.A.

THE BANKERS CLEARING HOUSE.
Architects:
4 Messrs. Whinney, Son & Austen Hall, F.R.I.B.A.

BANK BUILDINGS FOR BANK OF ENGLAND.
Architect:
5 Victor Heal, Esq., F.R.I.B.A.

ULTIMATE DEVELOPMENT OF OFFICE CENTRE, Bridewell, E.C.4.
Architects:
6 Messrs. Trehearne & Norman, Preston & Partners, F.R.I.B.A.

TROLLOPE & COLLS
BUILDERS & ENGINEERS · LONDON
ESTABLISHED 1778

No Dotheboys Hall here...

Ilkley Primary School,

Hubert Bennett, Esq., F.R.I.B.A.,
County Architect,
West Riding of Yorkshire

Accotile Specialist Contractors:
Messrs. T. K. Yeates and Hanson Ltd., Leeds.

but a modern School... right-down to it's *Accotile* FLOORING

If you remember your Nicholas Nickleby you will recall the terrifying Mr. Squeers and his infamous seat of learning which Dickens set in Yorkshire. Times have changed and the Educational Authorities of that County can now boast of some very fine Schools, including this one in the heart of the beautiful Ilkley countryside. Like many modern schools up and down the country it is furnished with Accotile, the thermoplastic tile flooring, which Architects agree is practical, economical and most colourful for the purpose.

We shall be pleased to send you samples and further detailed information.

FEATURES

Available in 22 colours, 12" x 12" and 9" x 9" tiles, ⅛" and 3/16" thick, with feature strip, coved skirting, and decorative multi-coloured hand or die-cut insets of numerals, animals, ornaments, etc.

It can be laid on screeded concrete in contact with the ground.

Accotile is laid only by Armstrong Cork Co. Ltd., or approved Specialist Contractors from over 90 branches and depots throughout the country.

* *British Registered Trade Mark 663698 Armstrong Cork Company Ltd., Registered Users.*

ARMSTRONG CORK COMPANY LIMITED, Flooring Department, BUSH HOUSE, ALDWYCH, LONDON, W.C.2. Tel: CHAncery 6281

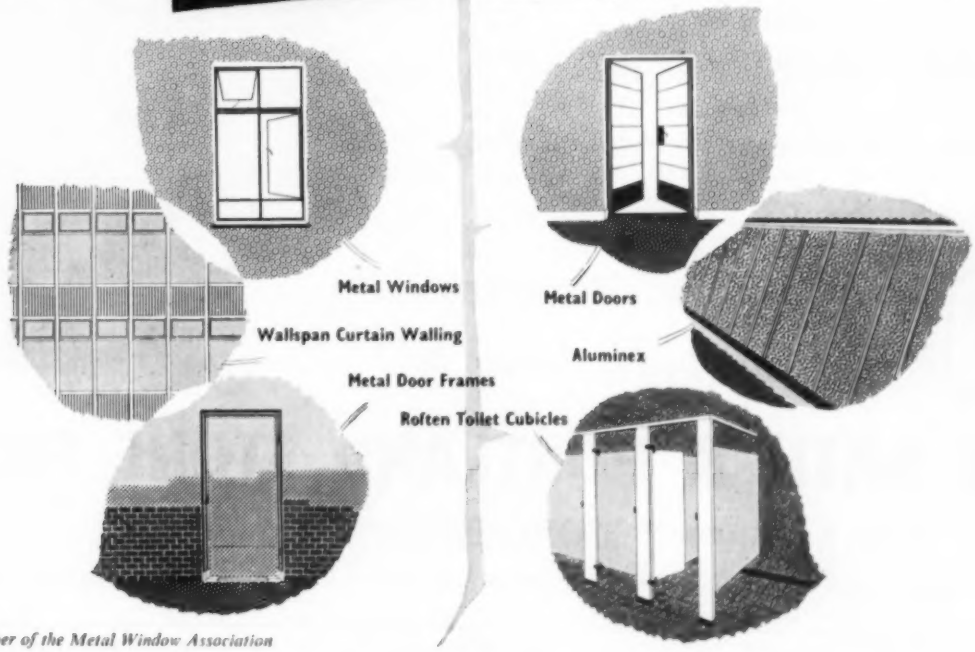
Ref. 324

Arthur Brooks has green fingers Time was when Mr. Brooks*—a structural engineer—won first prize for roses at a Surrey Horticultural Show. And when all six foot two inches of Mr. Brooks won a table tennis championship for the Divisional Police. And when he became a golfer with a handicap of 8. Time was, in short, when Mr. Brooks had time! But as Williams & Williams Divisional Manager with an overriding responsibility for Greater London, the West of England and South Wales, and as a Director of Williams & Williams (South Western) Ltd., he has time only for the odd job in the garden now. You'll find him digging into metal window problems, nipping trouble in the bud, cutting corners and smoothing paths of architects. He does it all so pleasantly too!

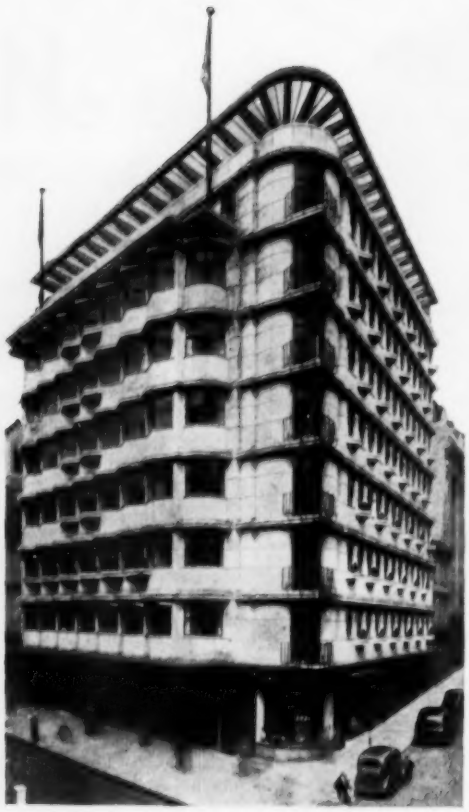
* MR. A. S. BROOKS supervises offices in London (Sloane 0323). Bromley (Ravensbourne 6274). Bristol (38907). Cardiff (27092).

Other offices at: Belfast (23762). Birmingham (Shirley 3064). Glasgow (Douglas 0003). Leeds (21208). Liverpool (Central 0325). Manchester (Blackfriars 9591). Newcastle-upon-Tyne (21353). Newmarket (2277). Nottingham (52131). Reading (2540). Sheffield (51594). Southampton (26252). Tunbridge Wells (3269).

METAL WINDOWS WILLIAMS & WILLIAMS

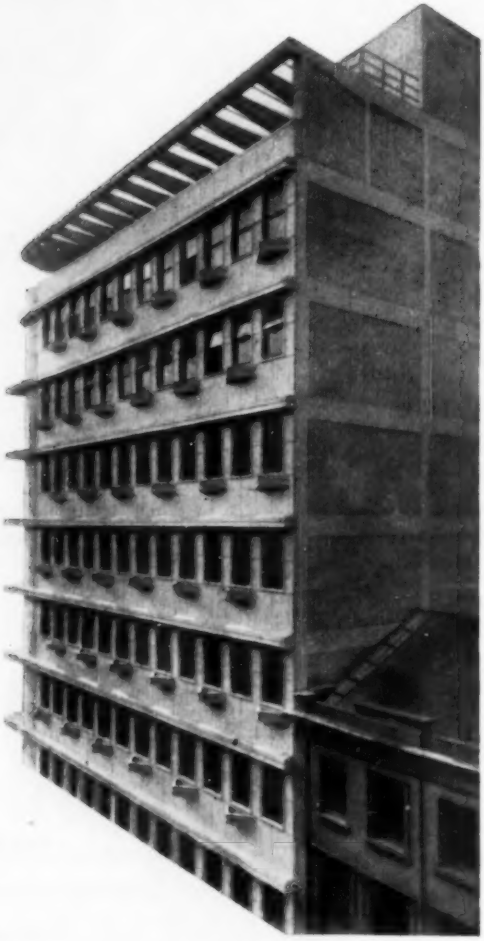


Member of the Metal Window Association



SHELL-BP HOUSE

BIRMINGHAM



Architects

COTTON, BALLARD AND BLOW

Consulting Engineer

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THE **KINYLON** GRILLE

An entirely new development of the 'Rolling Shutter' principle

Constructed entirely of translucent nylon units carried on aluminium rods. It is light in weight, strong, and noiseless in operation. The units are chemically inert and will not corrode. The grille is easily fitted and carries the Kinnear guarantee.

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ICI Copper

and Roofing

Copper as a roofing material is practical and durable. A piece of copper sheeting recently removed from the roof of Somerset House bore the date 1812—and was in excellent condition, apart from war damage, after 142 years' service. These new sections of Somerset House roof—also, of course, in copper—will no doubt be in equally good condition in A.D. 2096—142 years from now. The damaged roofing has been repaired by Builders Iron and Zincwork Ltd., London, with copper sheet supplied by the Metals Division of I.C.I.

M.345

IMPERIAL CHEMICAL INDUSTRIES LIMITED, LONDON, S.W.I

ON the rugged East Coast of Scotland lies the little town of Dunbar. From Dunbar the fishermen sail out, in all weathers, for the great fishing banks far out in the North Sea. A hard and dangerous life these men lead, and when they do come ashore to see their families they deserve every comfort. Happily, Dunbar is setting a new high standard in this direction. In fact, Basil Spence and Partners, the Architects for the scheme of Fishermen's Cottages, part of which is illustrated above, received the Saltaire Society Award.

Now Available in 54 Gloss Colours

You can depend on Cementone

number seven

THE UNIVERSAL DECORATIVE FINISH

It's Alkali-Resistant!

LIKE their boats, their cottages, being situated right on the sea shore, are continually subjected to the ever-changing moods of wind, wave and weather. A Cementone product was chosen to protect and decorate these cottages. Being durable and resistant to alkali and sea air, Number Seven Primer and Exterior Flat Finish was applied to all the exterior surfaces. The various colours are seen at their best against the foundation of natural bright red sandstone. And how well the new blends with the old.

Number Seven, the all-purpose paint, can be applied to every type of building surface; and the new colour card giving fuller details and showing the attractive range of colours, all of which have been classified in accordance with Munsell's notation, will be sent, by return, on request.

JOSEPH FREEMAN, SONS & CO. LTD.
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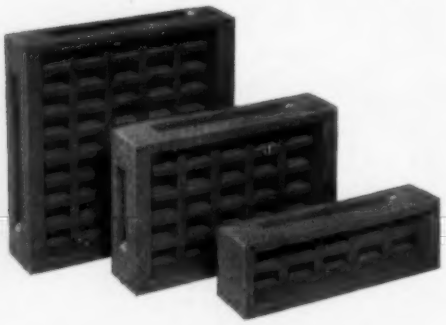
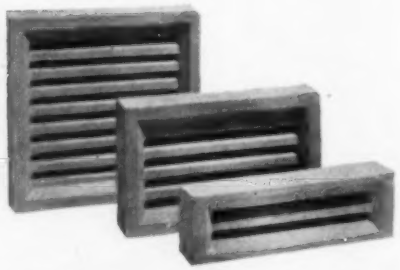
WASHINGTON CONCRETE AIR-BRICKS



These Air-bricks can be incorporated in the brickwork without breaking the bond, therefore no time is lost in cutting or filling.
Supplied in sizes 8¾ × 2¾in., 8¾ × 4in., 8¾ × 5¾in., 8¾ × 8¾in. 8¾ × 11¾in. Special sizes to order. Available from stock in red, buff and grey. Special colours can be supplied to order, their unique design provides the maximum of ventilation and low cost makes them the most economical Air-brick produced.
Type "A" in our standard rustic finish.
Type "C" A very hard Engineering type brick with smooth finish.



WASHINGTON TRULOOV AIR-BRICKS

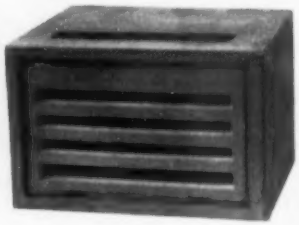
A high grade air-brick designed where extra strength is needed.

For use in conjunction with our CAVITY SEALING AIR-BRICK and in lieu of a plaster ventilator, for exterior work particularly in factory, office and school building.

Available from stock in sizes 8¾ × 2¾in., 8¾ × 5¾in., 8¾ × 8¾in., 11¾ × 8¾in. Colours red, buff, grey.

Not an imitation but a perfect louvred brick.

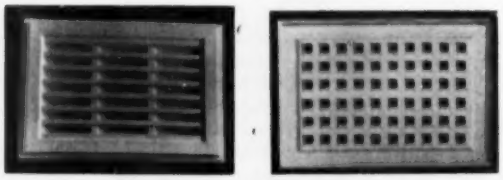
WASHINGTON TRULOOV CAVITY SEALING AIR-BRICK



A high grade air-brick designed to eliminate water penetration, and the fixing of slates across the cavity. Manufactured throughout in a WATER PROOFING compound. The perfect louvred face ensures an absolute safeguard against water penetration.
Available from stock in sizes 8¾ × 2¾in., 8¾ × 5¾in., 8¾ × 8¾in., 11¾ × 8¾in. Type A 7¾in. deep, type B 9in. deep. Colours, red, buff and grey.
Weepers are provided to carry away condensation that may form. A firm fixing is assured by the ample frogging on the top and base of the brick.

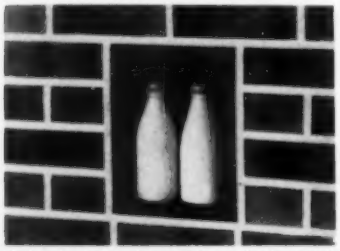
FIBROUS PLASTER VENTILATORS

Louvre and Square Hole



Available in sizes 9 × 3in., 9 × 6in., 9 × 9in., 9 × 12in., 12 × 6in., 12 × 12in. Type A 9 × 6in. size incorporates 6 horizontal bars and 2 vertical bars, the 9 × 9in. size with 10 horizontal and 2 vertical bars, is one of the strongest ventilators made.

MILK BOTTLE NICHES



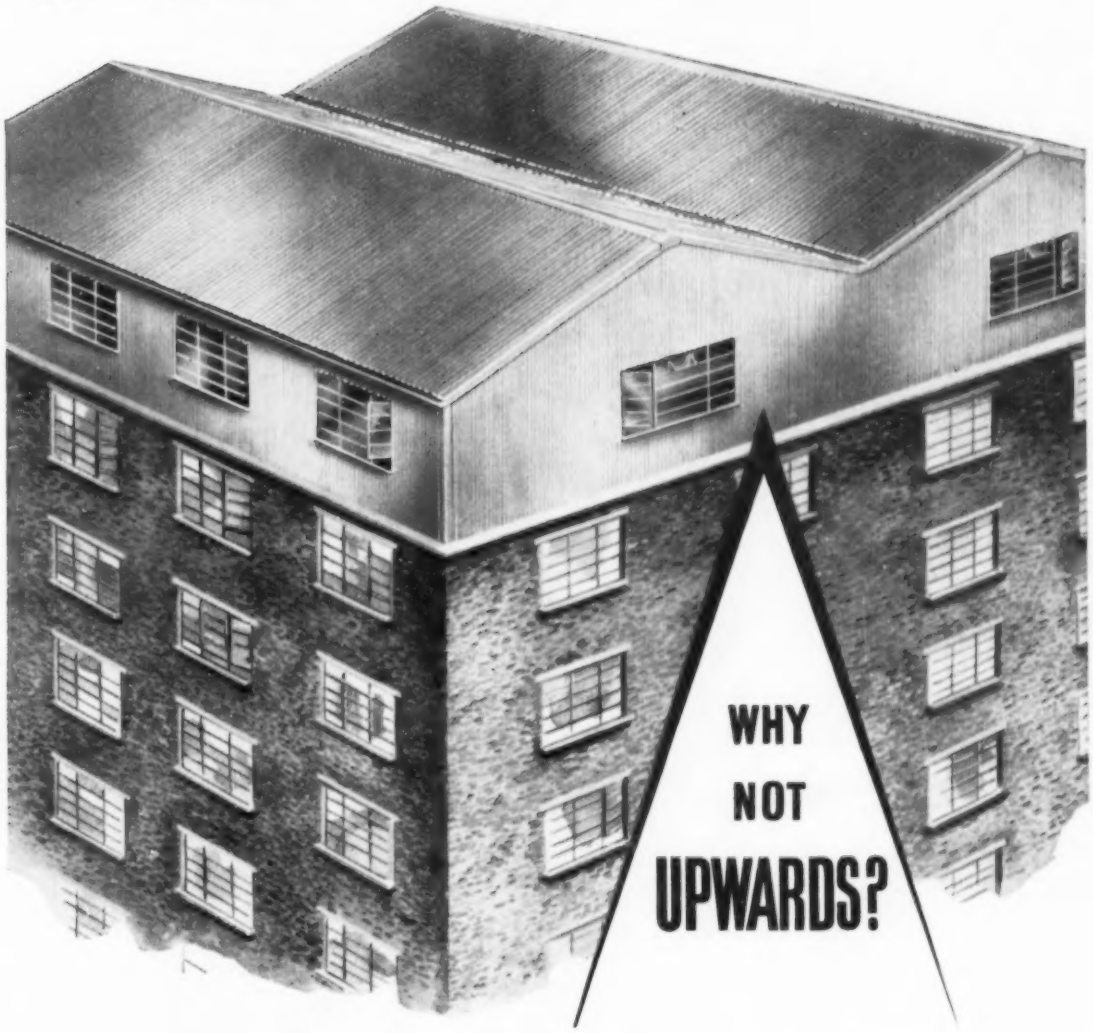
A milk bottle niche that bonds with the brickwork. They keep milk cool and free from contamination by birds or animals. Size 9 × 12 × 5in. and are produced in standard colours, red, buff or grey. Special colours, imitation and reconstructed stone can be supplied. Delivery from stocks.

SUSSEX CEMENT & CONCRETE PRODUCTS

Hillside, Washington, Sussex. *Telephone: Ashington 241.*

EXHIBITED AT THE BUILDING CENTRE, LONDON.

No room for EXPANSION ?



The light weight and ease of erection of ALFRAME aluminium buildings frequently makes it possible for them to be erected, quickly and economically, as additional storeys on existing buildings. The foundations need no re-inforcement and factory production continues virtually undisturbed. *Whether you could use an extra storey, or simply additional buildings at ground level, why not write to us today?*

S·M·D ENGINEERS LTD

IN ASSOCIATION WITH **ALMIN LIMITED** FARNHAM ROYAL BUCKS

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Insulation, sir!—and what might that mean? Nobody bothered a hundred years ago. Coal was cheap and, if most of its heat was immediately lost through walls and roof, who cared—or even knew? We do things better nowadays. We use *Celotex Cane Fibre Insulation.* Applied to roofs, ceilings and walls, Celotex cuts fuel consumption, reduces heat losses, keeps warmth where it is needed. In winter, the building is better heated at lower cost; in summer it remains cool and comfortable.

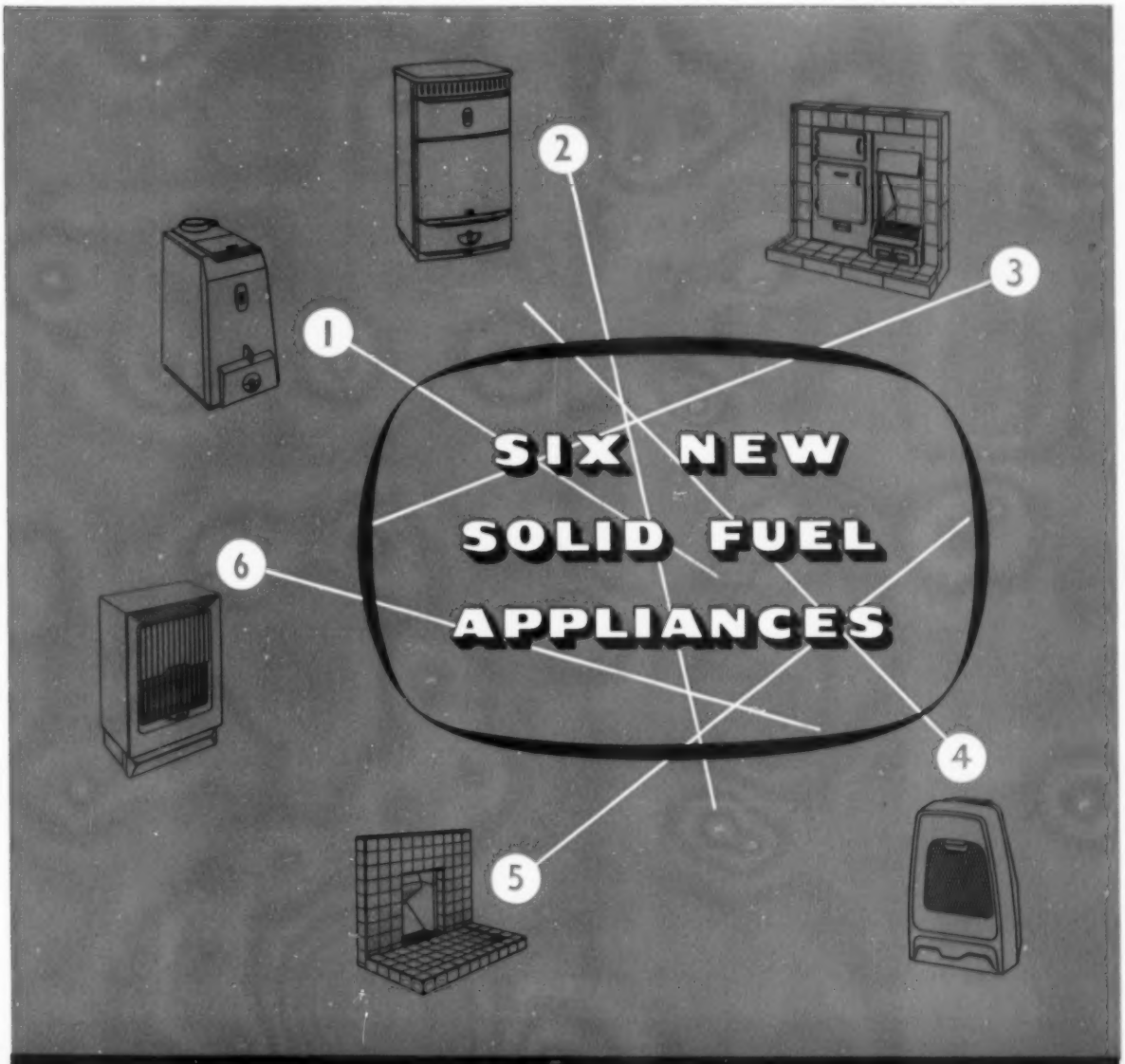
In new buildings and existing structures alike, these results follow upon the installation of Celotex. For Celotex—and *only* Celotex—is *cane fibre insulation.* Only Celotex uses the long tough fibres of the sugar cane, to produce a board which combines outstanding qualities of thermal insulation with great structural strength and lightness in weight.

It follows, then, that in any building operation which demands these qualities; the only wholly satisfactory answer is...

CELOTEX

Celotex Cane Fibre Insulating Building Boards are made in Great Britain with all-British materials by

CELOTEX LIMITED, STONEBRIDGE PARK, LONDON, N.W.10 Elgar 5717

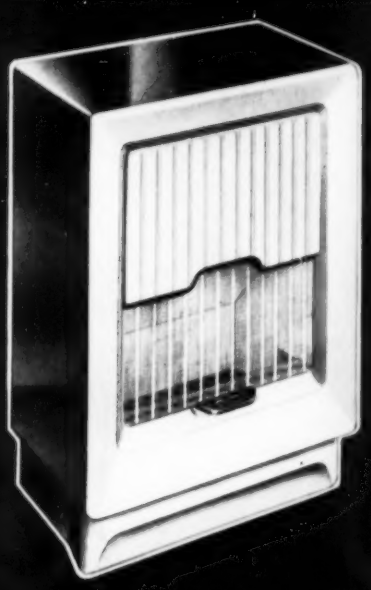


FEDERATED FOUNDRIES LTD

1 SOFONO SLOW COMBUSTION STOVE Nos. 1 & 2
2 SOFONO SLOW COMBUSTION STOVE Nos. 3a, 4a, 5a
3 ENSIGN COMBINATION GRATE
4 SWIFT STAND-IN FIRE
5 SUMMIT UNDER-FLOOR FIRE
6 SOFONO SUNRAY STOVE

GRANGE-CAMELON IRON COMPANY LIMITED FALKIRK

SOFONO-SUNRAY STOVE



The Sofono-Sunray Stove is a new, contemporary styled, slow combustion stove. It combines the clear view of an open fire with the efficiency of an all night burning closed stove.

A special feature is the new type of transparent fire door screen which does not smoke up, and can slide up out of sight when not required.

It is available free standing or inset, and in two contrasting or matching colours in bright lustrous or vitreous enamel.

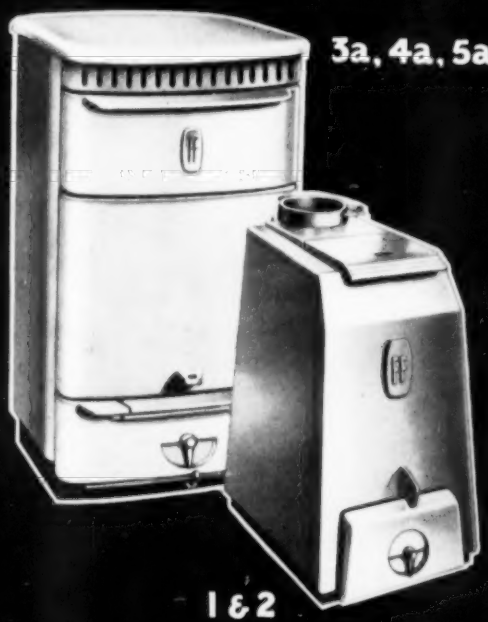
The unit can be supplied with or without a boiler and may be fitted into any type of fire surround with the minimum of structural alterations.

DIMENSIONS

Free Standing		Inset	
Height	29½"	Height	29⅜"
Width	18½"	Width	19"
Depth	11"	Depth	11" (with 1⅜" projection beyond tile surround)

GRANGE-

SOFONO SLOW-COMBUSTION STOVES



Nos. 1 and 2

This all-purpose stove is designed to provide trouble-free and economical heating to garden huts, small halls, waiting rooms, workshops, etc. It burns all types of fuel and is overnight burning. A shaker grate has been designed for easy riddling and the rotating sector air control is simple and accurate. The unit is constructed of durable cast iron and is finished in "fine cast" or may be supplied in Black Vitreous Enamel.

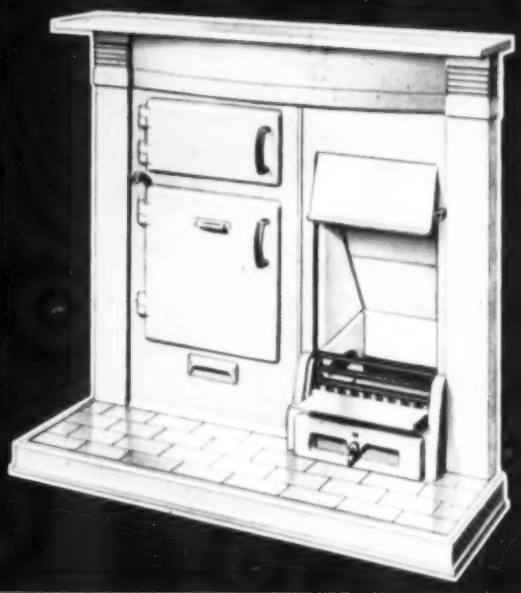
Nos. 3a, 4a and 5a

With its large heating surface, the stove is most suitable for small halls, club changing rooms, community centres, schools, nurseries, waiting rooms, welfare centres, cafes, restaurants, shops, public houses, municipal offices and works, etc.

The unit is completely enclosed and may be fitted with convection side panels.

Available in lustrous or vitreous enamels in many colours.

THE "ENSIGN" COMBINATION GRATE

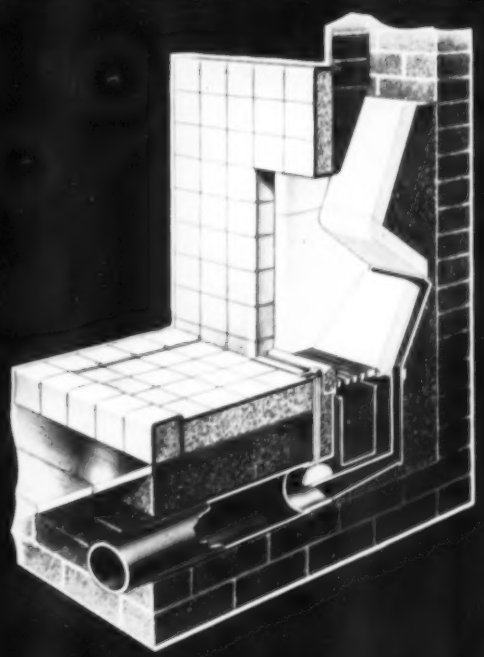


The Ensign Combination Grate has been re-designed to meet current demands. The 14" all night burning fire is fitted with a patent drop-down front which enables the whole of the fire to be seen and, therefore, a greater room radiation is obtained.
The main oven gives an even temperature for all cooking and baking, and the top oven acts as a hot cupboard or slow cooking oven. A triple-purpose trivet, which acts as a normal trivet, an extra hot-plate and a safety closure cover is also incorporated. The Mantel and Raised Kerb as illustrated are extra to the basic specification.

DIMENSIONS
38" wide x 38" high

CAMELON
IRON CO., LTD.
FALKIRK

SUMMIT FIRE



The Summit Fire incorporates a completely new idea which is designed to minimise room air changes and convert smoke into flame thus giving greater radiation.
Air is drawn through the pipe under the floor, brought up behind the fire where it is heated and is finally emitted through the slot at the back of the fire. This heated air ignites the fuel gases, which would otherwise go up the chimney in smoke, and provides a secondary source of heat. It is comparatively simple to install, and all the necessary fittings are supplied.
The unit is overnight burning and will burn for 3/7 days without ash removal.

SWIFT STAND-IN FIRE

The Swift Stand-in Fire is designed for existing tiled fireplaces when an ordinary open fire is not desired. It will fit a 16" x 22" or 16" x 24" fireplace opening with an ordinary fire back.
The Swift has the cosy and comfortable look of a fully open fire with the advantage of a closed stove.
One of the advantages of this appliance is the restricted throat, controlled by a damper, which prevents too much ventilation and heat losses up the chimney.
An expanded metal fire guard clips on to the front of the fire making it safe where there are children in the house.
Finished in bright lustrous or vitreous enamels with a wide choice of self-colours or mottles.

JUST TO REMIND YOU OF...
the always popular—

RANGE OF SOFONO FIRES

SOFONO

The original all night burning Sofono Fire in 4 sizes, 12", 14", 16" and 18". In a wide variety of lustrous and vitreous enamels. Prices according to size and colours.

SOFONO DROP FRONT

This model gives excellent radiation and the novel drop front can also serve as a trivet. In sizes 14", 16" and 18". Also in a wide variety of colours in durable vitreous or lustrous enamel.

SOFONO LO-FRONT

Designed for your customers who prefer a lower fire front and a less expensive fire. The trivet, which is an extra, can also act as a closure cover. In sizes 12", 14", 16" and 18".

GRANGE-CAMELON IRON CO., LTD. FALKIRK

...for the swift, effective

and durable sealing of

joints which move

Seelastik is a neutral coloured sealing compound. It adheres tenaciously to all clean and dry surfaces. After 24 hours weathering it develops a tough protective skin which can be painted. Beneath this skin it remains soft and pliable and will not become brittle or hard. These qualities enable Seelastik to provide a watertight durable seal in all forms of traditional and prefabricated building construction. Seelastik is applied with the 'Expandite' hand-or air-pressure Caulking Gun using 'cellophane' cartridges.

Seelastik

EXPANDITE LIMITED

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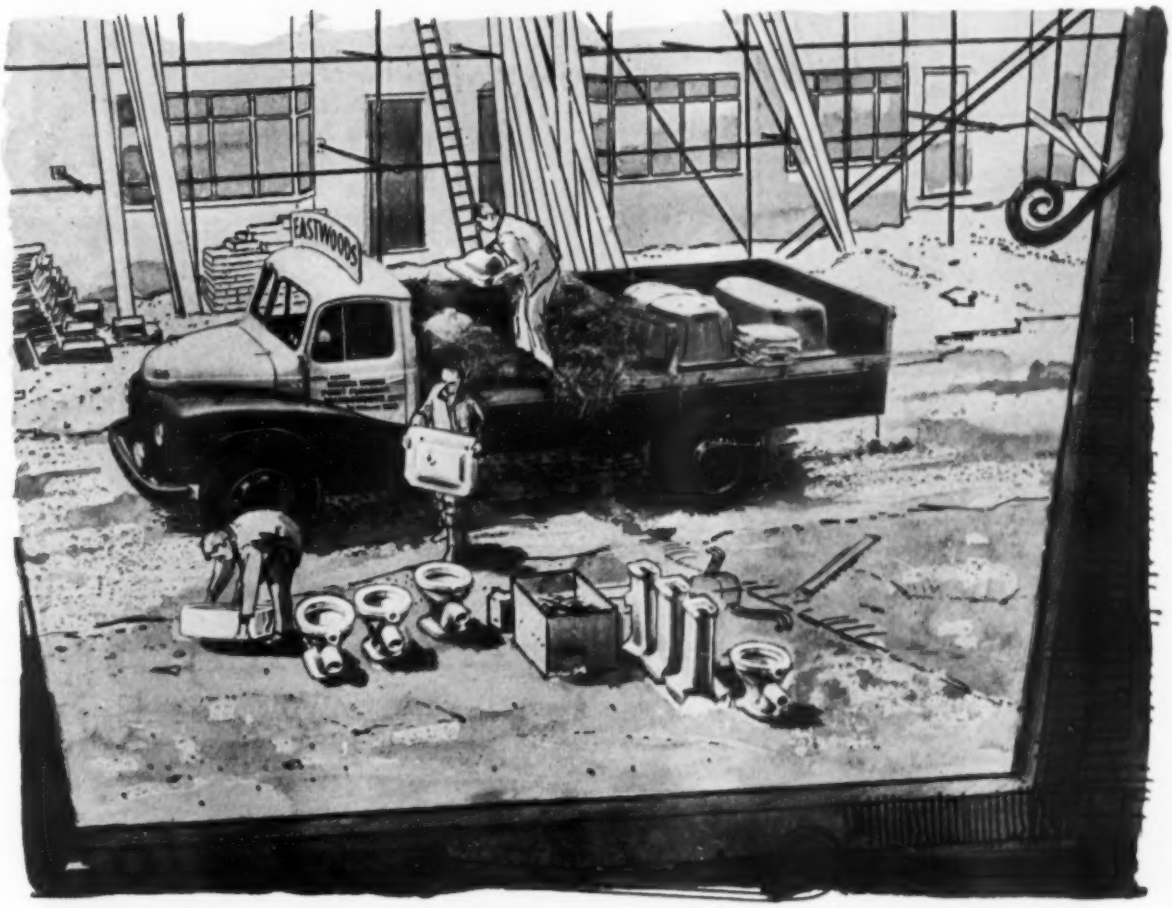

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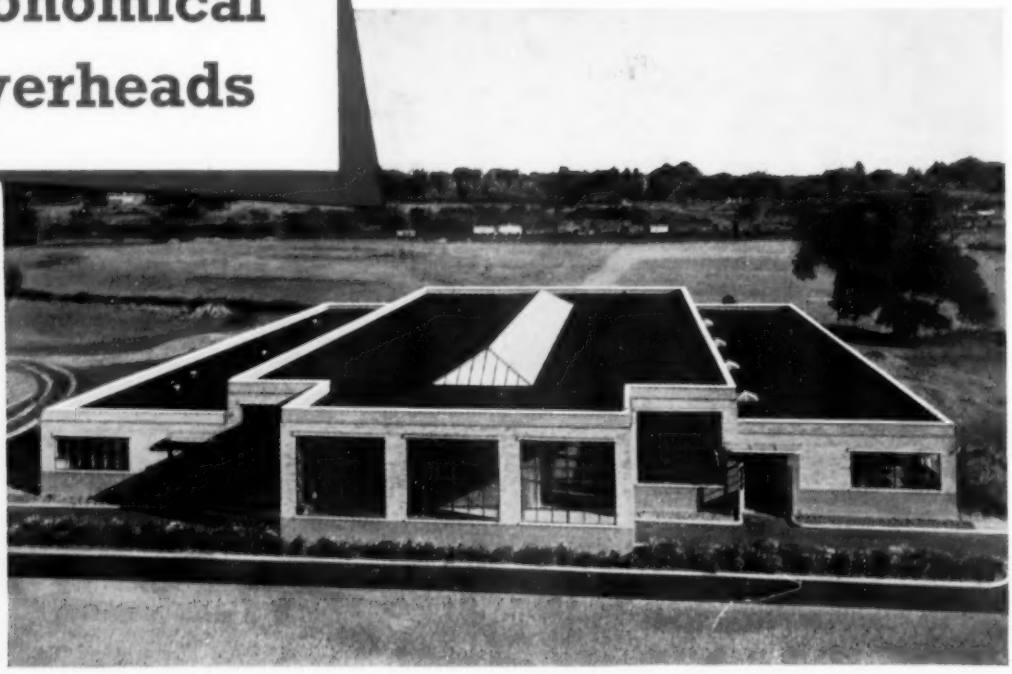

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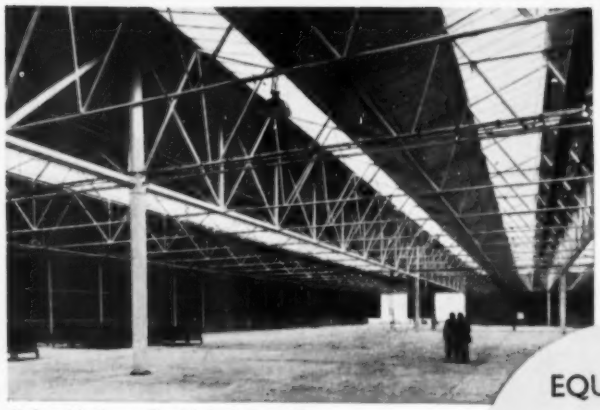

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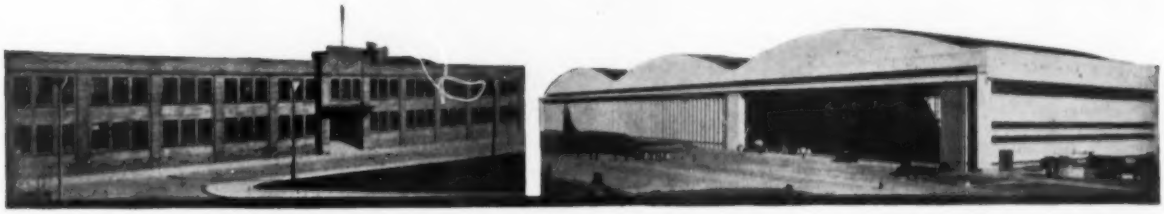
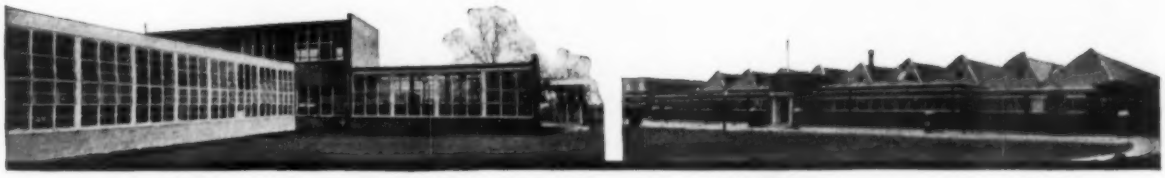


HAVE STOOD THE TEST OF TIME*



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Illustrated at the top is the Strand Comprehensive School at Tulse Hill. Architect to the London County Council: Dr. J. L. Martin, M.A., Ph.D., F.R.I.B.A. Schools Architect: Sidney Howard, L.R.I.B.A. Architect in charge: J. M. Kiddall, A.R.I.B.A.

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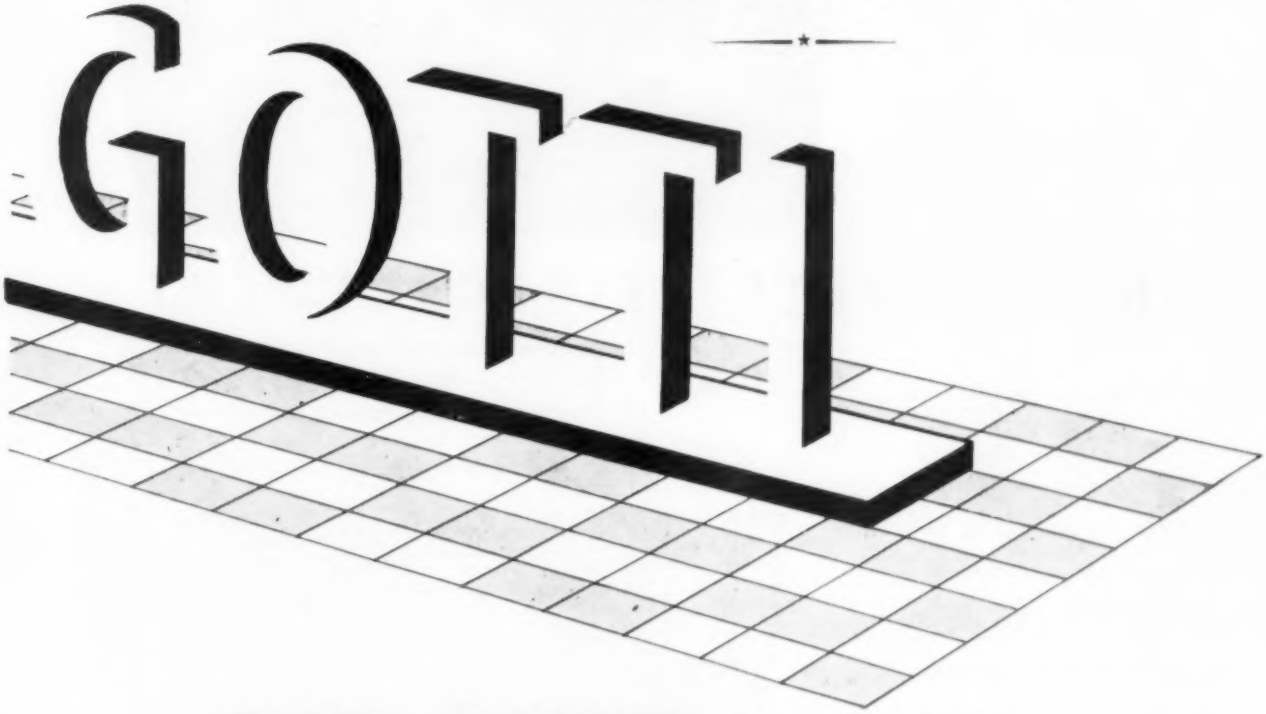

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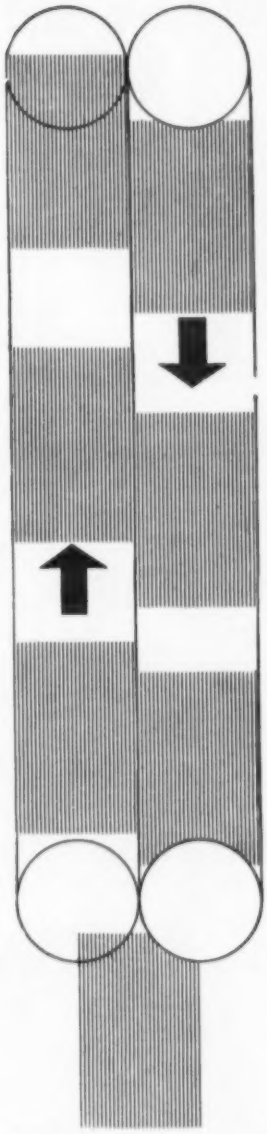

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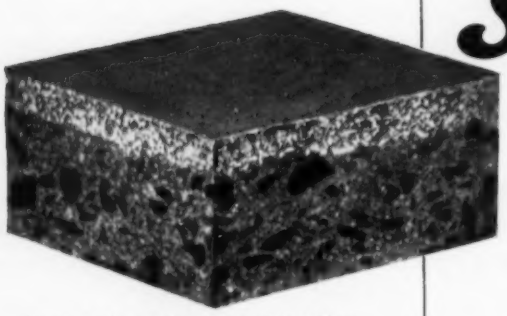

Section of a Stelcon Steel Clad Flag which shows clearly its great density.

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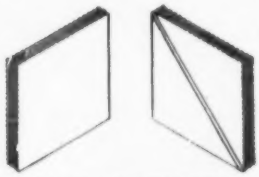

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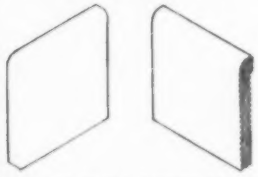

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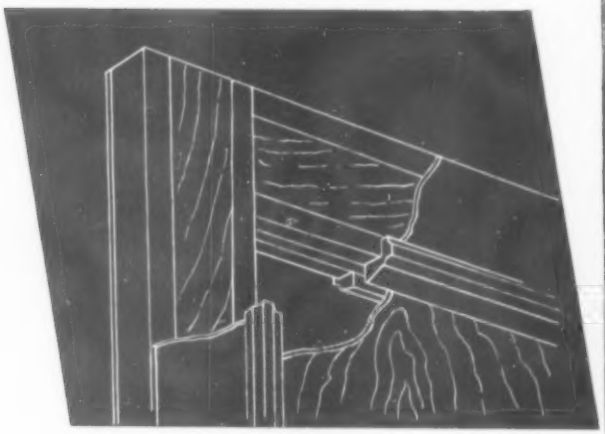

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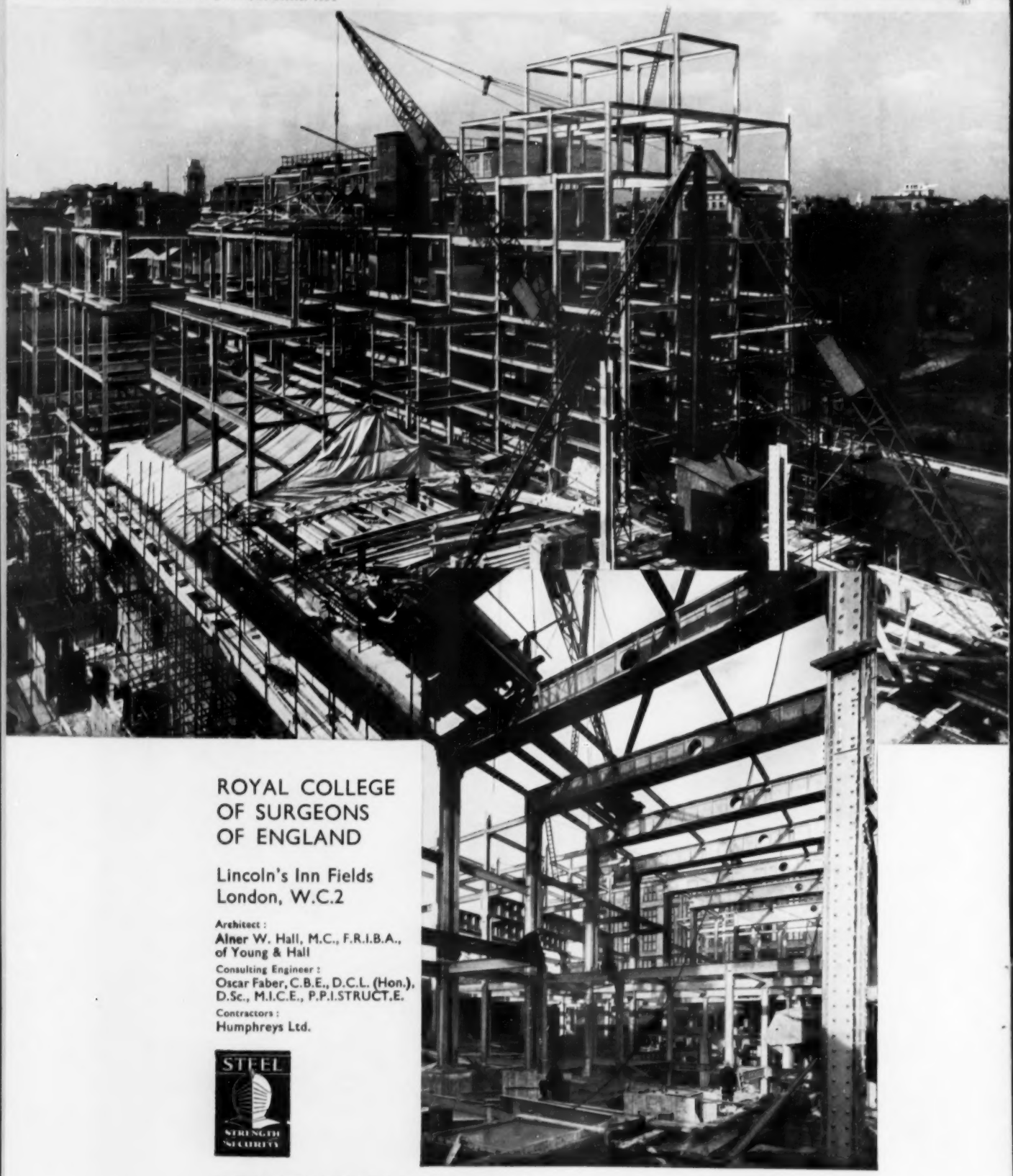

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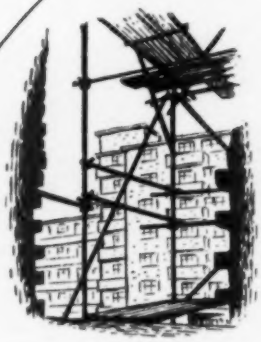

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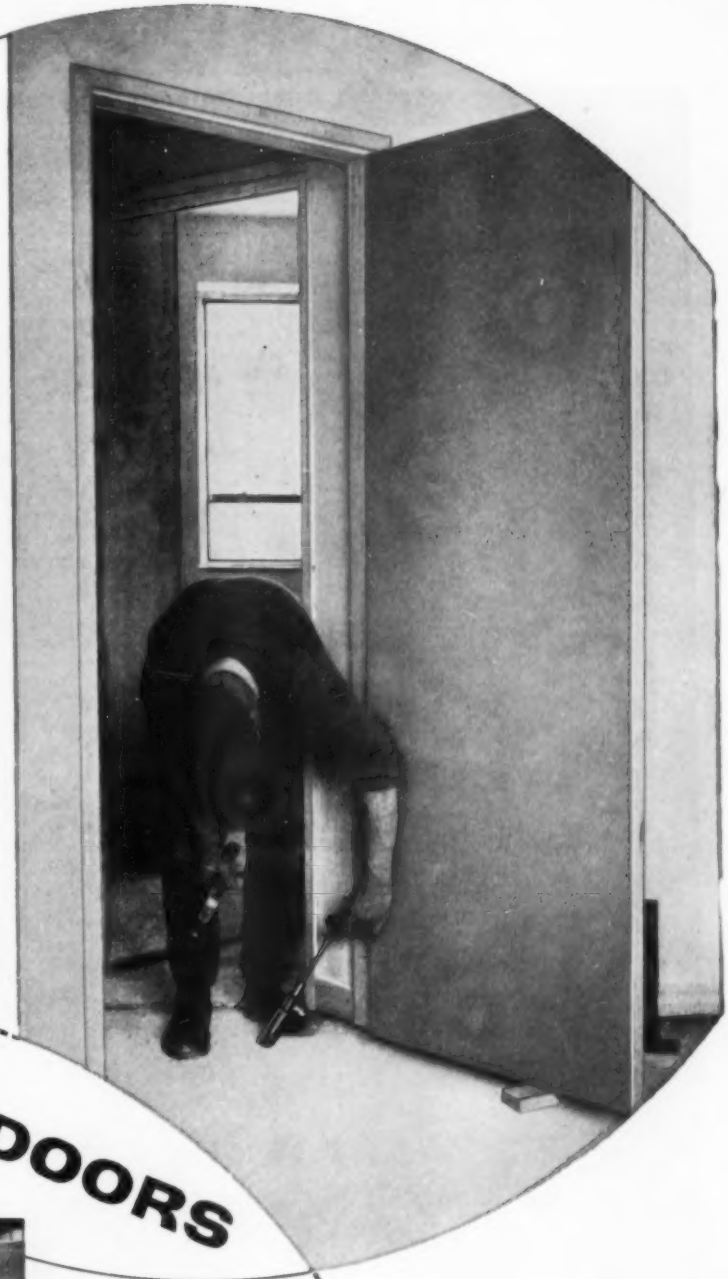

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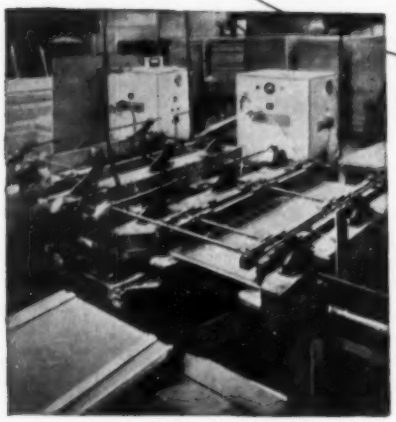

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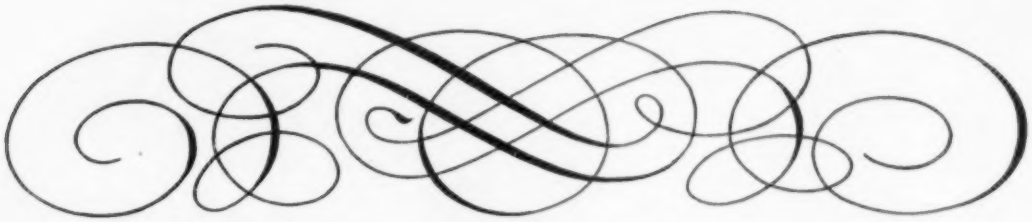

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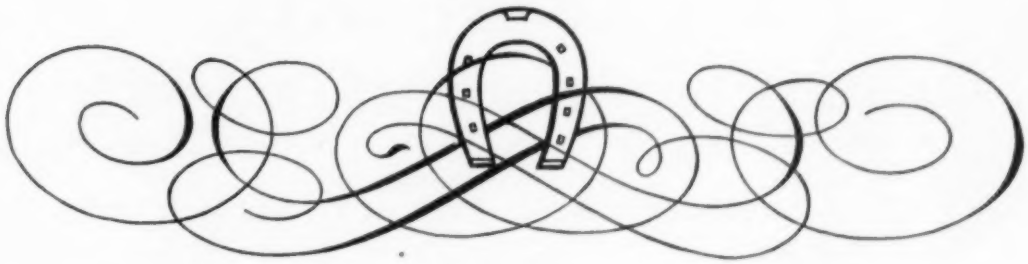

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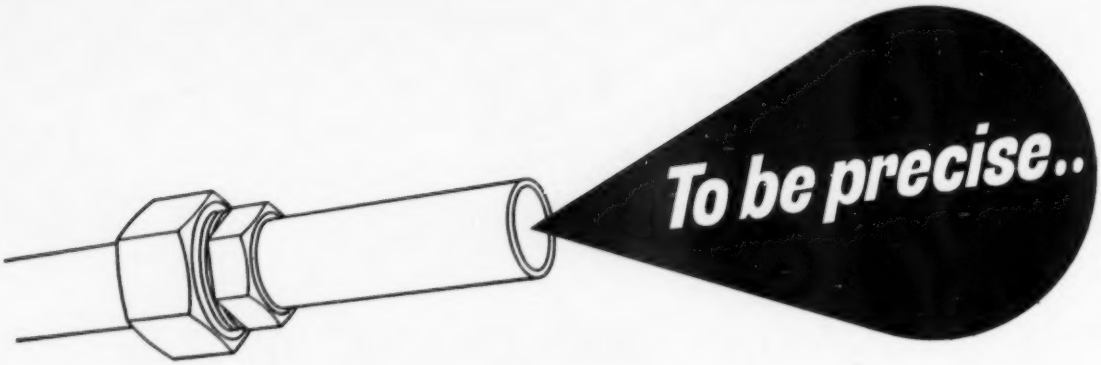

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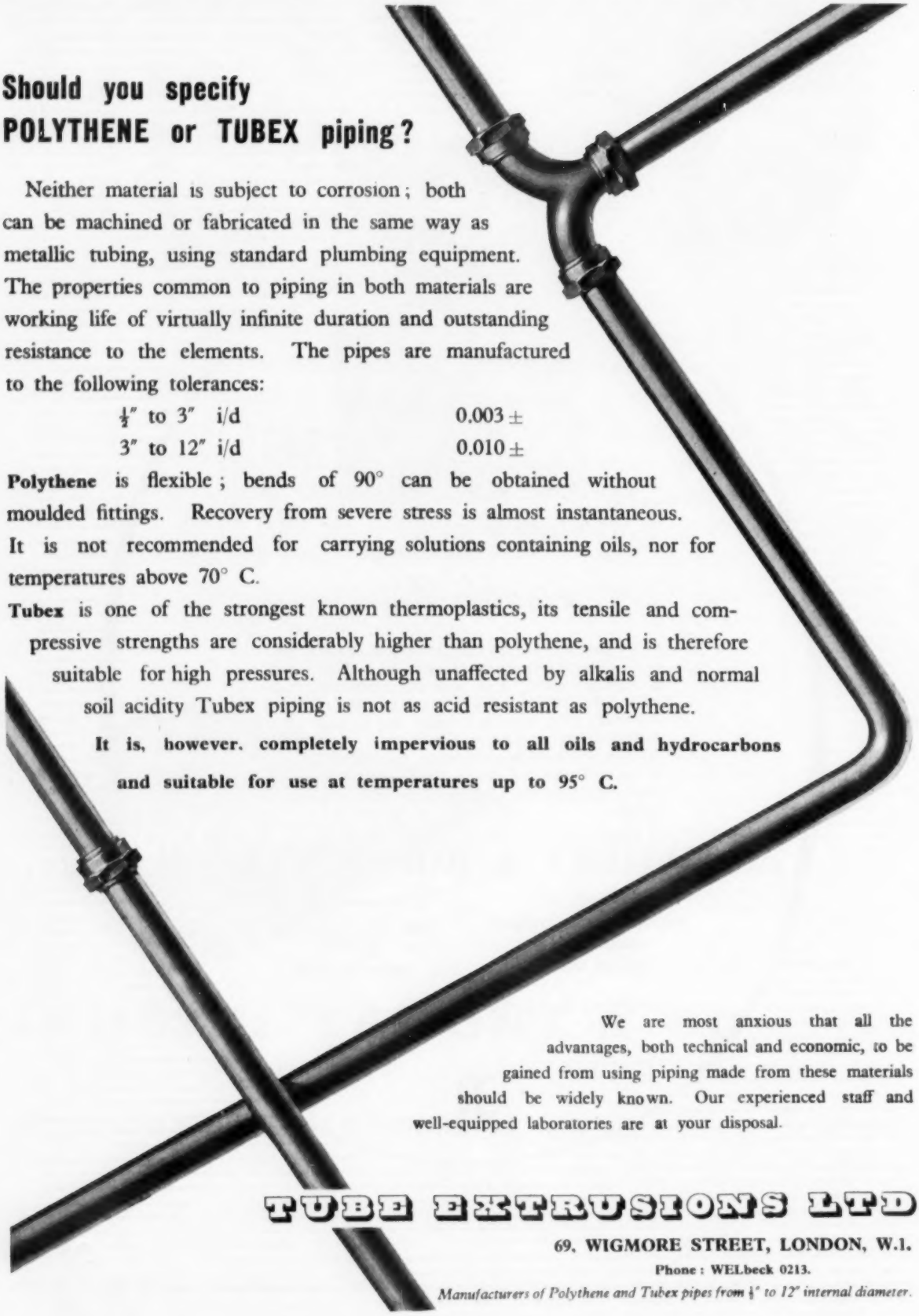

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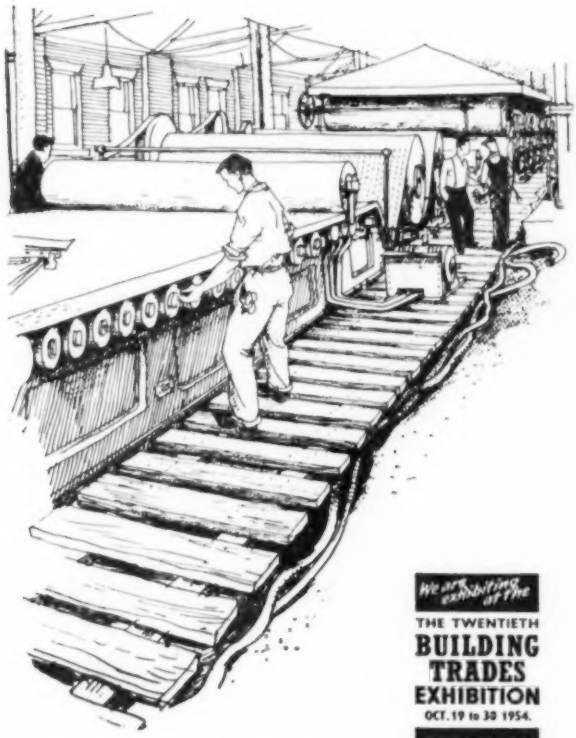
"the place is full of steam...



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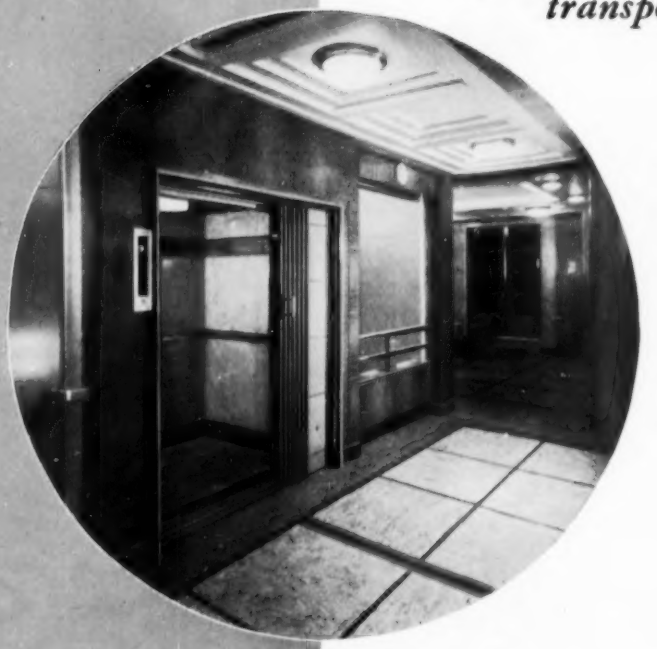

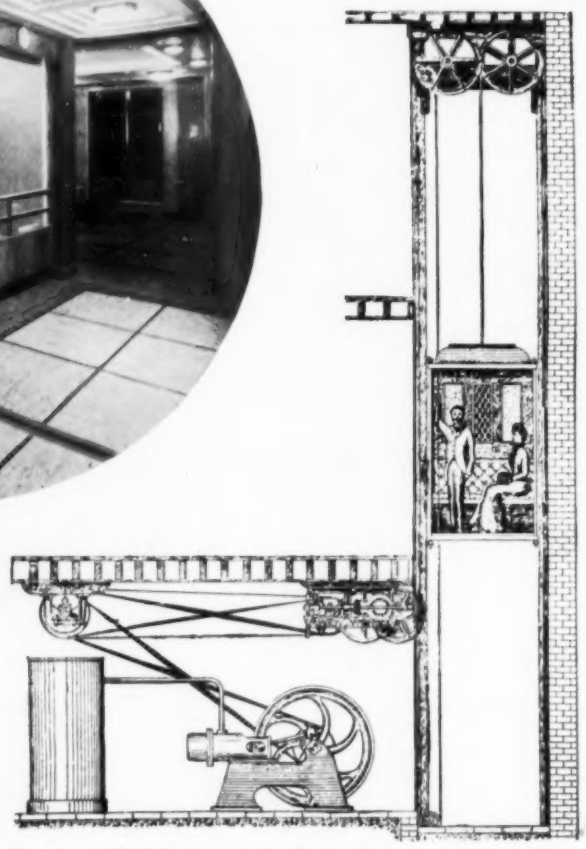

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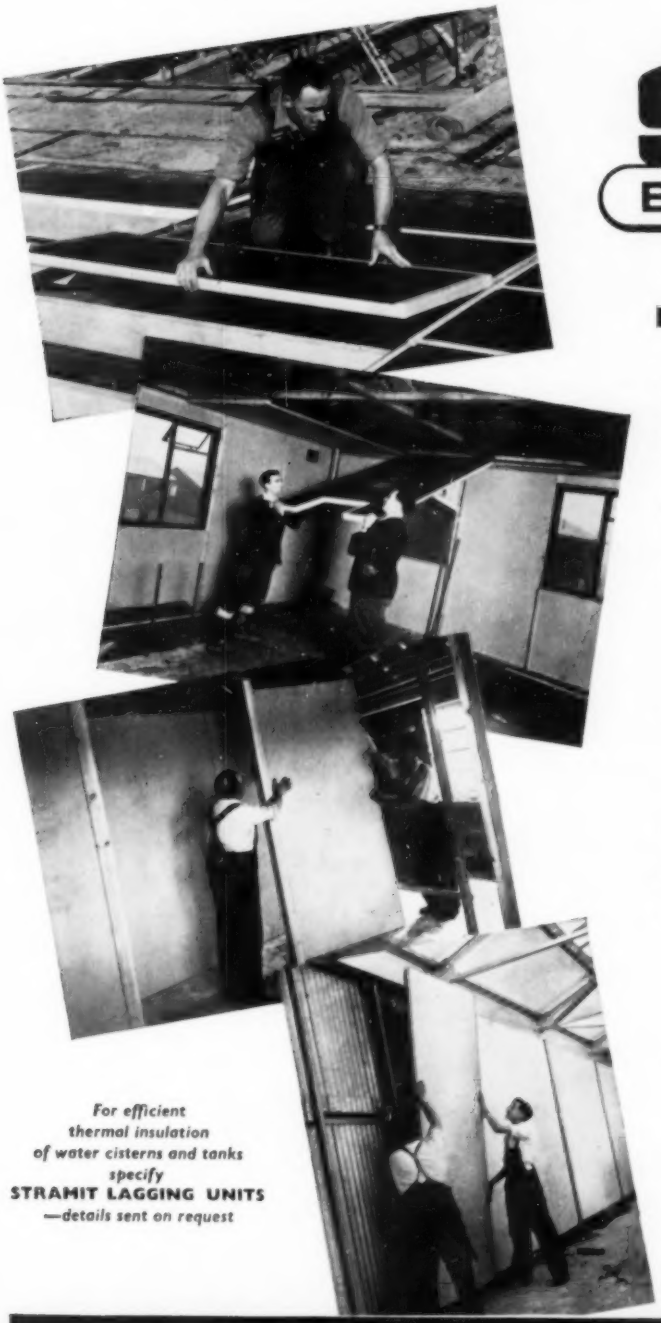

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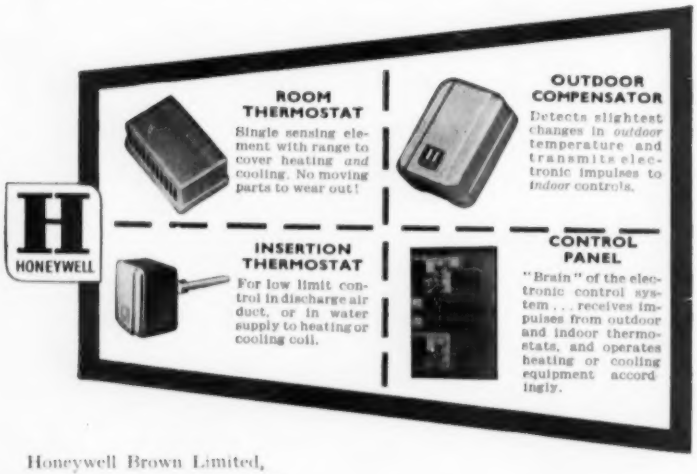
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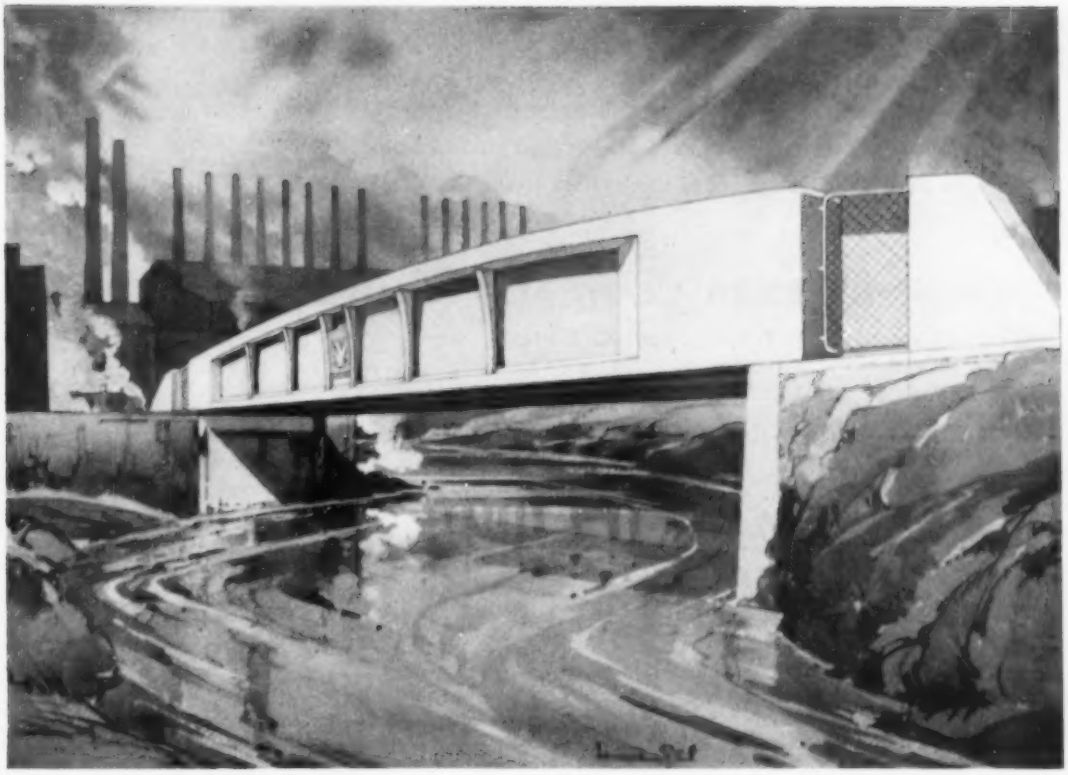

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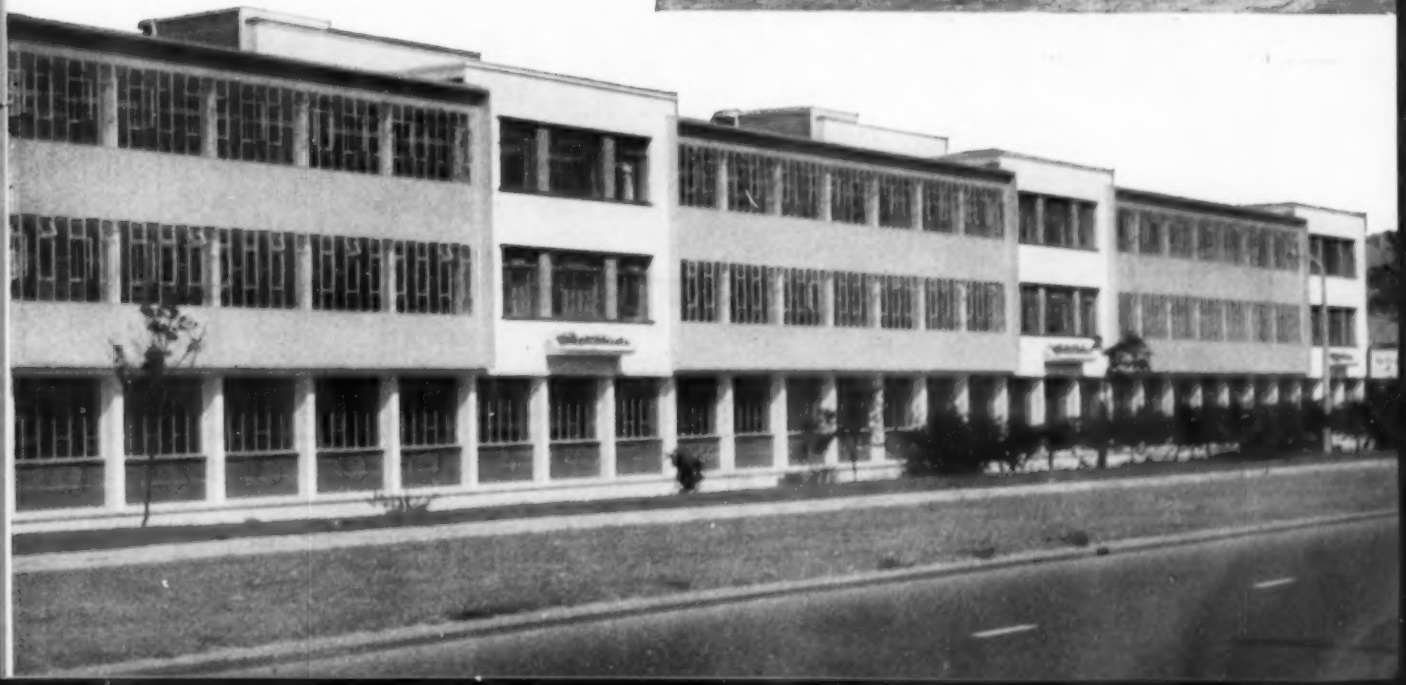

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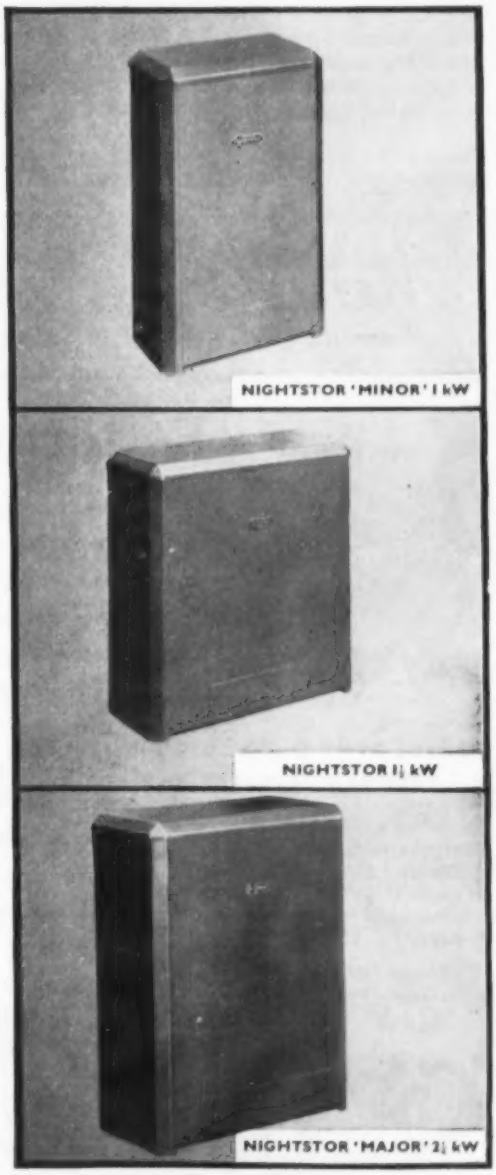

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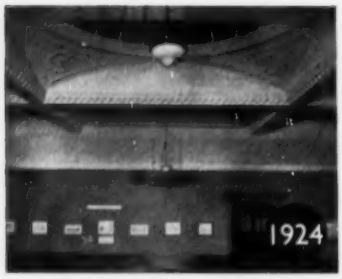

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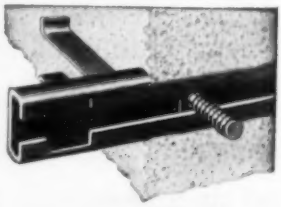

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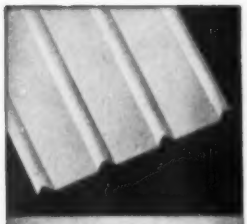

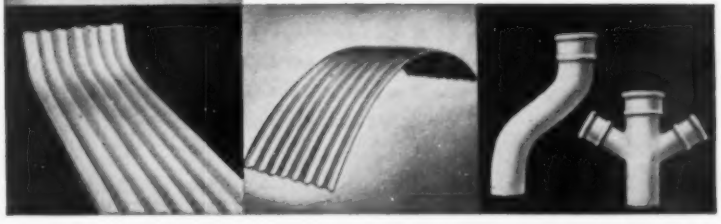

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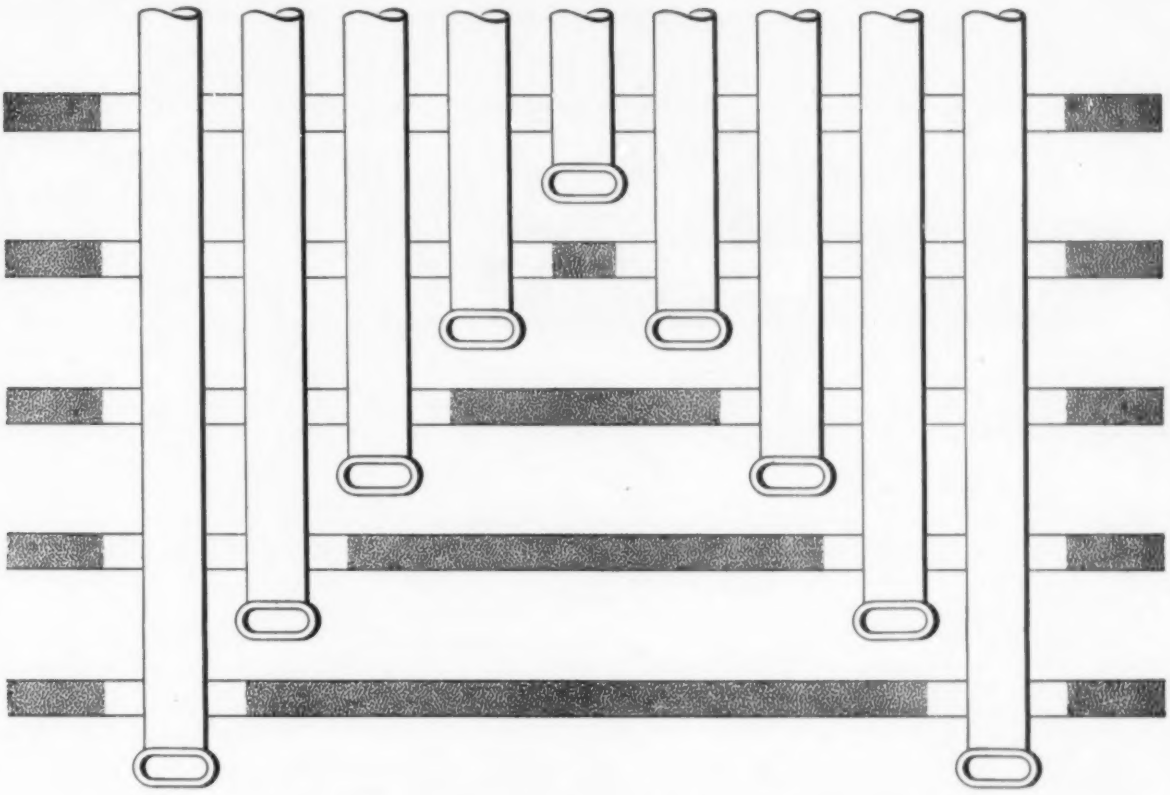

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Heat Service

The Gas Industry will be glad to discuss with you the question of heat services and flues. If you have a specific problem, please write in detail. Alternatively, you can use this coupon. In either case, your inquiry should be addressed **to your Area Gas Board or to the Gas Council, 1 Grosvenor Place, London, S.W.1.**

I/We would like to receive the latest information on flue design.

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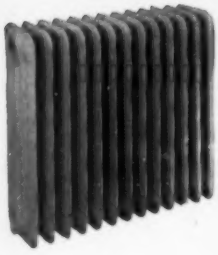

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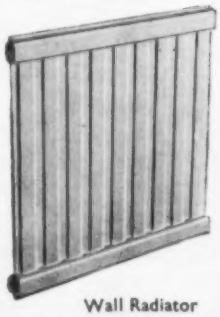

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Vol. 206 No. 17

THE ARCHITECT & BUILDING NEWS

21 October 1954

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THE FIRST HUNDRED YEARS

A HUNDRED years ago the *Building News* already had a readership waiting for it since the R.I.B.A. had been founded 20 years previously and the A.A. and several other Societies like that at Liverpool were already in existence. The growing prosperity of the country and the age of inventions provided the advertisements. Illustrations were few, highly skilled engravings of the new town halls, mansions, churches, which were springing up rapidly. Travel was the thing and British and foreign cathedrals and monuments also had a big share in these illustrations. The Leaders were pompous, well seasoned with clichés and Latin tags (a thing you don't get from us now very often); but the leader writers were alert, and castigated folly whether governmental or professional. Wrong as often as right and hedging where doubtful, they were in fact our ancestor in direct line.

Plans to scale of villas were published in those early years, together with specification and bill of quantities (are we coming round to that again?). A gentleman called Solomon Setsquare wrote a weekly "letter" to a young professional confrère giving him the benefit of his great experience in an avuncular and presumably palatable form.

Meetings of architectural societies were reported and legal and technical articles were regular features. There was even criticism. (Probably the architects a century ago earnestly invited criticism of their work and when they got it inevitably remarked "What does he know about architecture, he never put up anything in his life.") On the whole, turning up the early volumes is like doing the same thing with "Punch"—they are funny peculiar rather than funny Ha! Ha! But the thread running through that has real meaning is the record of discussion on the ideas and problems, both of design and professional status and organization. Here is something to respect, the slow growth of professional integrity and knowledge. Since nothing like a complete record exists of the Journal's editorial staff, it would be invidious to mention a few from among so many. For each one known by name there is the anonymous contributor of equal worth. Therefore no history, no anecdotes, no dates, merely a general salute of 100 guns fired in honour of the whole company of our predecessors. It is an appropriate occasion to pay a general tribute embracing all those whose skill and labour have contributed to this journal during the last century. Among them are all the architects whose work has been illustrated and whose drawings reproduced. No one seemed to grudge the time taken in writing notes and giving assistance in every way. How many professional men have written articles specially for the paper; how many allowed their lectures to be printed for the benefit of others?

A special tribute should be paid to that really noble band of regular contributors whose remarkable output of information and advice has maintained interest in technique at a continuous high pitch. Then there are the draughtsmen and photographers, taking infinite pains and often working long hours and against time; what an invaluable contribution theirs has been. Again there is the engine-room staff; the blockmakers and printers, highly skilled; always being urged to greater speed. They are to the journalist what the building operative is to the architect—indispensable.

Have we gained more on the swings than we have lost on the roundabouts? Elsewhere in this issue are some essays by writers who are distinguished in the field they survey. Judge by what they have to say.

It is difficult to look back and forward at the same time; but let us imagine ourselves back in 1854

GLASS AGE DEVELOPMENT IN SOHO

A night time perspective of Soho in the future, a scheme prepared by G. A. Jellicoe, Edward D. Mills and Ove Arup who were invited by Pilkington Bros. Ltd. to form a Glass Age Development Committee to answer the question of what would you do if you had to develop such an area in the year A.D. 2000. The Glass Age Development Committee was formed with the object of giving publicity to the results of experience and research in new and better uses of glass. It is understood that over a period of years more schemes, not confined to London, will deal with other localities in Britain where replanning possibilities are offered. The Soho scheme includes six point blocks of flats rising above water gardens and helicopter alighting areas extending over the roof tops of buildings. Below will be preserved the character and activities of Soho which exist to-day.

and assume that the journal was then already 100 years old. Fascinating though a survey of 1754-1854 would have been to look back on, how much more was yet to happen from 1854 until the present day, and how little of it foreseeable. It can be assumed that it is the same for us now. The next century must hold for architecture and building a future so interesting, strange and unknown that one would give a very great deal to be vouchsafed a miraculous preview of it. The chemists will create materials which will extricate us finally from the clutches of rust and corrosion, rot and decay and many of the handicaps due to our present incomplete knowledge. We may, as the Crystal Palace suggested, be able to enclose vastly greater volumes of space, and fill them with a climate of light and conditioned air that will make our present individual blocks of draughts and gloom seem ridiculous, and make the our-of-doors weather a matter of indifference.

The expansion of building to include more and more application of scientific knowledge is bound to happen. The last century saw the impact of engineering and science; to-day we concentrate on rationalizing production and organization, a painful and transitional period. It is probable that ideas will spread throughout the world more rapidly, and that co-ordination between architects, builders, scientists, engineers and social-scientists will yield increasingly successful results. They must do, or the problems, like the traffic problem, will produce chaos. The driving force which will push everyone to co-operate will be fear of the crack-up if any alternative is followed. All this knowledge will have to be fitted together into a humanistic pattern or it will explode. The rôle of the architect will we hope continue to be that of a good cook, a superlatively good cook, in the sense that he must take his ingredients and out of them make a delicious and nourishing dish, but in the case of architecture it becomes our environment. Heaven on Earth or Hell on Earth. To-day it is a compound of both—we must move in one direction or the other. Whichever it is the *A. & B. N.* will record it in weekly instalments —read on.

For a symposium on some of the principal developments during the last hundred years, turn to pages 499—516.

EVENTS AND COMMENTS

CENTENARY

To have made a hundred at cricket or billiards, to have lived a hundred years or to have run a hundred yards are marks of distinction denied to the large majority of us. Trees, tortoises and parrots think nothing of breathing continuously for that length of time. But many animate and inanimate objects fail to stay the distance and expire in double figures. Congratulations, then, to the publishers, editorial staff, advertising department and printers (and allied tradesmen) of the *A. & B. N.* for keeping at it so long and with such a will. I have purposely omitted the contributors, mainly because so few of them are yet a hundred years old, and any collective congratulation would therefore appear to be an exaggeration.

Edwin Gunn, who remembers the paper of 60 years ago, says that it was, of course, then two papers, the *Architect* and the *Building News*. The former was, for some unexplained reason, always to be found in railway hotels.

It must be this fact which buried in my subconscious makes me so fond of British Railways food and interested in their design. The two papers were combined under the editorship of W. L. Wood, and Gunn became one of its leading contributors. It is interesting to record the names of some of the people who have worked on the paper in the last 25 years. Eric Bird, Edward O'Shaughnessy, Christopher Saltmarsh, John Summerson, W. M. Woodhouse, Charles Crichton, Peggy Richards, Philip Scholberg. At least one person has pointed out that I am an unworthy successor to John Summerson.

On another page you will find a letter from Mr. A. H. Adamson in which he comments on life in the building industry 60 years and 100 years ago. On the face of it things were spacious, leisurely and cheap then. Top hats were worn and apprentices' moral conduct was closely controlled. There was time and inclination to do things well. Income tax was only 6d in the £, but as the craftsmen's rate was only 9d an hour, pounds were a good deal rarer than they are now.

Looking back becomes more and more fun as we grow older. It is notorious that distance lends a rosy glow. Looking forward, on the other hand, seldom gives anything like the same satisfaction to the middle-aged. Helicopters and universal air-conditioning will not bring to them the breathless excitement that they might be expected to produce in readers of the *Eagle* and the *Junior Press*. That is why I think that the proper audience for a Press conference on the "Glass Age Development of Soho" should be boys and girls and not autumnal shaded journalists.

SO HIGH, SOHO

Vast schemes of redevelopment are all the rage just now. Last week we had Alto-Barrytone, this week it is "The Glass Age Development of Soho." Messrs. Pilkington Bros. have produced many bright ideas in the past, but this is their brightest. Messrs. Jellicoe, Mills & Arup were formed into "a glass age development committee" with instructions to draw up plans for the development of a number of areas. The first was Soho. You will find their forecast of A.D. 2000 at the Press show on the facing page. Mr. Arthur Pilkington, in his introductory remarks, pointed out that he and his colleagues had been careful to give the committee no instructions whatever that glass should be included at all costs wherever possible. This seems to me to show the unbounded confidence which Pilks have in their product, but it would have been awkward if the committee had decided that transparent plastics was really the thing.

Mr. Jellicoe described the scheme with much enthusiasm. He explained that once one got into the way of designing on this scale (and, I suspect, when excused of any possibility of having to make the thing work) fresh ideas were constantly presenting themselves, and he was able to throw a few in while he was talking. In a nutshell, the idea is to leave Soho more or less as it is and then to cover it over with a series of concrete platforms. The streets would become high-level glass-lined canals for the Soho Gardens—successors to Battersea. The existing roof levels would be maintained and the differences in level of the canals would be controlled by a system of locks. Above the general platform level there would be six huge blocks of flats and maisonnettes to house 10,000 people.

This is twice the present population of Soho. No one would live below the platform. The buildings would be for commercial purposes only and would be heated and air-conditioned by atomic power. The basements of Soho would become a huge car park and a lot of the roof a helicopter landing ground. Everyone would be very happy paddling their own canoes round the canals or looking through the sides of the glass swimming pools. There would be full employment for window cleaners. Glass tube would take the place of pasta in spaghetti shops and there would never be a shortage of gondoliers.

Mr. Jellicoe thought that the waste heat from so large a development might quite possibly tend to change the climate of Soho, but I was sorry that he went no further than that. A tropical jungle in the middle of London would indeed be a talking point for the British Travel Association—"Why go up the Amazon when you can get lost in Soho Square?"! Although Mr. Pilkington said that the committee were instructed not to take into consideration individual personal prejudices about developing an area which to-day provides so many pleasures, I think that the choice of Soho is emblematic of this type of "space-man" planning. Most of the best food in London is prepared in the bowels of this precious rectangle. Soho should be placed in a glass case, not hidden under a concrete slab. Its succulent cooking smells and garlic-scented breath should be gently circulated to other parts of the metropolis.

The Committee's scheme, in spite of my remarks, deserves serious attention. High Paddington and High Barbican, which are being put forward as building possibilities are, whether we like the idea or not, only steps in the direction of High Soho.

THEY, TOO, LOOKED FORWARD

My attention has been drawn to the following extract from the *Illustrated London News* for March 18, 1854:

"The building occupies a large space on the centre of the east side of Leicester Square, for many years a great focus of metropolitan exhibitions. The Panopticon, however, belongs to a higher class than the majority of the sights previously located in the square.

"The style of the architecture is reputed Saracenic, and its minarets and horseshoe arches are of that period of art, but its escutcheons, which are prominent features of the elevation, represent the most important branches of the arts and sciences in the arms of their professors, in addition to the Royal Arms and bearings of the Panopticon itself with the motto 'Monte et Manu.'

"Having passed through the vestibule, which is pleasingly decorated with encaustic tiles and English alabaster, next is the internal porch. 'Strictly Ornate Saracenic' and then we reach the Rotunda, the central dome of which is radiant with gold and colour. The ventilation and warming are by 'Gurneys Warming Battery' which is described in the 'Handbook' sold in the establishment. To the same source we refer the reader for details of apparatus to be exhibited here, to illustrate amongst other things—diving—turning and planing—aurora borealis and thunder. Pin and needle making—gas cookery—freezing mercury, ballooning under water and electric light. . . ."

Although we do not now practice very often the freezing of mercury the other exhibits, with one exception, have in their 20th century development become if not exactly a part of our everyday life at least familiar to us. The exception is, of course, under water ballooning. Quite apart from the difficulties of the technical developments in this sphere I understand that the art, or should I say science?, of underwater ballooning was deliberately suppressed by the authorities almost entirely because their Lordships at the Admiralty and the Air Ministry were quite unable to reach a basis for agreement on a navigational code.

COVENTRY GIBSON

The announcement a week or so ago that Mr. D. E. E. Gibson, the Coventry City architect, was to become County Architect of Nottinghamshire, was a very considerable shock. Development and reconstruction at Coventry is now at a most interesting stage. Things are happening fast, the face of the place is changing almost daily. It seems an odd time for a change of architect.

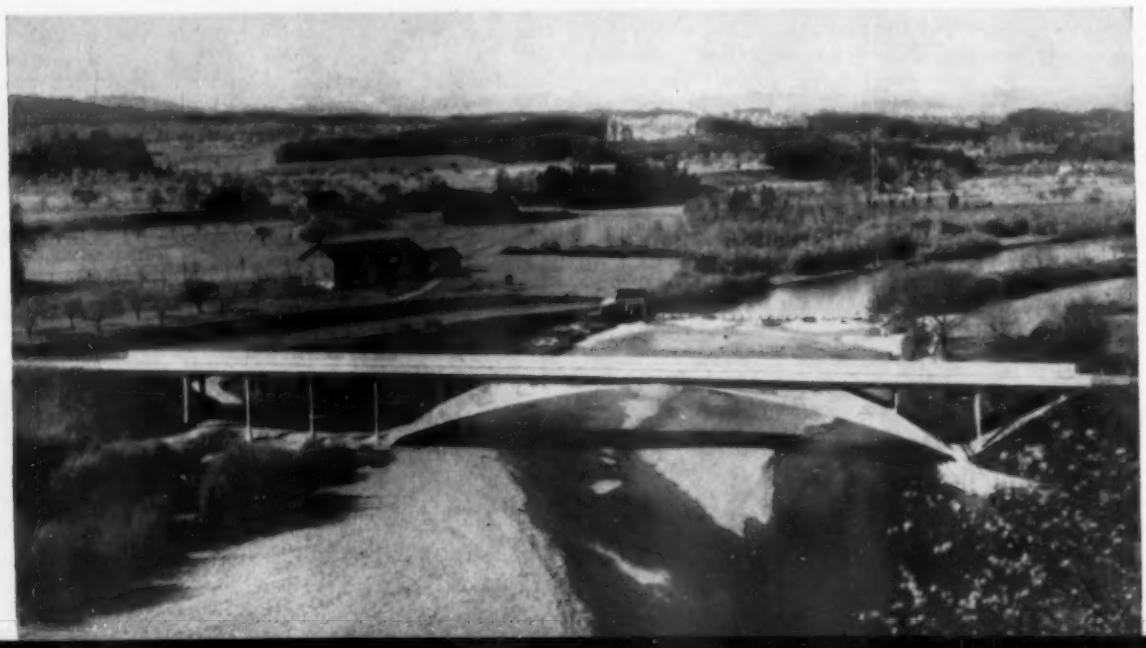
Now, it is known that Mr. Gibson's staff do not want him to go and have petitioned him to stay. They have referred to differences between Mr. Gibson and the Council. They do not say precisely what these differences are. We know that Mr. Gibson has asked for the organization of his staff to be changed and that these changes would mean that he would have four senior men under him at higher salaries than are now being paid. The Council are reported to have refused to pay the higher salaries. I should be surprised if this were the only difference between the parties, for Mr. Gibson has worked long and hard at his present task. The re-creation of Coventry might easily have been considered his life's work. Men do not abandon such things lightly.

The Coventry City Council has not cut much of a figure recently either in its attitude to the new cathedral or to the Government's Civil Defence policy, and it would be a crowning blunder if it allowed its very distinguished architect and planner to leave because of a shortsighted policy—at such a critical time in the city's reconstruction.

ABNER

BUILDING IN CONCRETE EXHIBITION AT THE R.I.B.A.

Yesterday the "Building in Concrete" exhibition was opened by Mr. C. H. Aslin, P.R.I.B.A. A review will appear in our next issue. The photograph of Robert Maillart's bridge at Tavanasa, 1905, is one of the exhibits. It is also mentioned in the first article in the symposium on 1854-1954, page 500.



NEWS OF THE WEEK

Ministerial Changes

Mr. Duncan Sandys succeeds Mr. Harold Macmillan as Minister of Housing and Local Government. Mr. Nigel Birch becomes Minister of Works in succession to Sir David Eccles. Mr. W. F. Deedes has been appointed Parliamentary Secretary, Ministry of Housing and Local Government.

London Builders Greet South Africa

L.M.B.A. Message to Jubilee Congress

The President of the L.M.B.A., Mr. R. S. Williams, has sent the following message of congratulation to the President of the National Federation of Building Trades Employers of South Africa, on the occasion of the Federation's Jubilee Congress, which is being held in Durban this month:—

"I send you the warm greetings of the London Master Builders' Association. You have a great history of valuable work for the building industry and the community in South Africa during the past fifty years, and I wish you a very happy and successful time. We look forward to hearing in due course something of your activities during this great occasion.

"We are happy that we shall be so well represented at your congress through Mr. H. C. Harland. He did splendid work in the L.M.B.A., and, as I think you know, he enjoyed what is the very unusual experience of being elected President for two years in succession.

"My very good wishes to you and your colleagues for the success of your Congress."

Manchester Exhibition

The 20th Manchester Building Trades Exhibition was opened at the City Hall, Deansgate, last Tuesday. This year, for the first time since these exhibitions have been held, every inch of the space was sold. An interesting feature of the exhibitions are the demonstrations and competitions of apprentices' work in carpentry, bricklaying, masonry, plumbing, plastering, painting and decoration and wall and roof tiling. Prize winning entries will be on view. Prizes, diplomas and sums of money, have been put up by Provincial Exhibitions, Ltd., supplemented by the Building Apprenticeship and Training Council.

Among the many interesting exhibits on the stand of Broads Manufacturing Co., Ltd., will be seen the patent multiflor refuse disposal chutes. The Cape Asbestos Co., Ltd., are again demonstrating the fire resistivity of Asbestolux insulation board as well as its various uses and applications. The Coal Utilization Council has a stand on which they show a wide variety of modern solid fuel appliances, the Solid Smokeless Fuel Federation are also showing modern domestic fires, the object of the exhibits having, (a) to demonstrate that solid smokeless fuels will minimize smoke pollution. (b) To show that the modern domestic appliances give more effective heat burning solid smokeless fuels.

Concrete, Ltd., have included a film demonstration in addition to the usual supply of descriptive literature. The "Flashhammer" bolt fixing tool is being shown by Condrup, Ltd., while metal windows and allied products are being exhibited by The Crittall Manufacturing Co., Ltd. Flush and panel doors are shown by F. Hills & Sons, Ltd., together with samples of plywood, tropical hardwoods, veneers, wood flooring blocks and other joinery products. Among the flooring stands is the Linoleum Manufacturers Association, with a comprehensive display of linoleum floors which is supplemented by a trade bureau. Another exhibit of flooring materials is supplied by E. Quiligotti & Co., Ltd., who also have walling materials on their stand.

Philplug Products, Ltd., are demonstrating their wide range of fixing devices; of particular interest are the cold caulking compounds for joining spigot and socket pipes, caulking tunnel segments and fixing balustrades.

Rapid Metal Developments, Ltd., have a comprehensive exhibit of steel shuttering for concrete construction; while Rawlplug Co., Ltd., show their full range of fixing devices, tools and products. "Fural" patented aluminium roofing and wall cladding is shown by S. W. Ronald & Co. (London), Ltd.

Sealocrete Products, Ltd., are showing their liquid colours for cement, concrete curing liquid and their decorative and bituminous products.

The Timber Development Association, Ltd.'s stand is very similar to that shown at the Building Exhibition in London last year. An interesting addition, however, is the model of a modern board-and-joist ground floor for houses. George Wimpey & Co., Ltd., have a display of material and literature.

Yorkshire Copper Works, Ltd., have a stand illustrating their copper tubes and capillary fittings for domestic services. Steel equipment for offices and works, including internal partitions, filing cabinets and cupboards, desks and chairs are being shown by Norwood Steel Equipment (London), Ltd. Sankey Sheldon, Ltd., are showing their permanent display unit last seen at the Business Efficiency Exhibition.

For the first time in the North of England the complete range of painting and decorating brushes manufactured by Hamilton & Co. (London), Ltd., are being shown.

T.U.C. Sculptural Competition

More than 100 entries in the competition for two groups of sculpture for the new Memorial Building have been received by the Trades Union Congress.

The two pieces or groups of sculpture for which competitors have submitted designs are:—

Group A: A Courtyard Memorial Group to commemorate the trade unionists who made sacrifices in two world wars. This will be placed against a Memorial Wall in the Courtyard of the new building.

Group B: A Main Entrance Group to be a symbol of the Trade Union Movement as a whole. This will be set over the main entrance of the building in Great Russell Street, London, W.C.1.

The entries are being judged by a panel of five assessors and will then be on view to the public at the Art Gallery, Imperial Institute, South Kensington, London, S.W.7, from October 23 to 27. Admission will be free and the gallery will be open from 10 a.m. to 4.30 p.m. on each day except Sunday, October 24, when the hours will be from 2.30 p.m. to 6 p.m.

It is the intention to commission the execution of the first prize-winning design for each group. It is hoped to install the sculpture for the Memorial Wall by September, 1955, and that for the main entrance by March, 1956.

The new T.U.C. Building for which these sculptures are intended is expected to be completed early in 1956.

APPOINTMENTS

Mr. E. W. Gain, B.Sc. (Eng.), A.M.I.C.E., senior executive assistant in the office of the New Works Engineer London Transport, has been appointed a Principal Executive Assistant and will be in charge of constructional work with responsibility for any necessary co-ordination.

Mr. J. E. W. Hanscomb, L.R.I.B.A., senior executive assistant in charge of building contract, survey and inspection work, has been appointed Principal Executive Assistant responsible for the co-ordination of the various activities of the Works and Building Section of the Chief Civil Engineer's Department, London Transport.

COMING EVENTS

Royal Institute of British Architects

Till October 30. Exhibition Building in Concrete. Mondays-Fridays, 10-7; Saturdays, 10-5. At 66, Portland Place, W.1.

The Architectural Association

October 27 at 8 p.m. Annual General Meeting. Address by the President, Peter Shepheard, B.Arch., A.R.I.B.A., A.M.T.P.I., A.I.L.A., at 36, Bedford Square, W.C.1.

October 28 at 7.30 p.m. Forum organized by the Students' Committee. Sergei Kadleigh, J. M. Richards and Arthur Korn will speak. At 36, Bedford Square, W.C.1.

The Modular Society

October 30. Visit to houses at Basingstoke.

CORRESPONDENCE

Timber Destruction by White Ants

To the Editor of A. & B. N.

SIR,—I was recently informed by a South African friend that he has just had to have the whole of the ground floor timber work of his comparatively new house renewed, owing to its destruction by white ants.

Whereupon, I collected an immense amount of data from Insecticide manufacturers, pestologists and other experts and sent it out to him to try.

His reply was as follows:—

". . . thanks for all this, which is effective for a single season only, but to repeat the dose every year and to apply over the whole of South Africa, would cost the country more than the whole continent of Africa is worth.

"Meanwhile, we in the Transvaal put up with a running loss of about £20 million a year and accept defeat. . . ."

Which information I find amazing. We seem to be successful in killing our rabbits—can't somebody discover an effective way of dealing with this pest and at the same time make a fortune?

I am, etc.,
SIDNEY LOWETH.

The Module

To the Editor of A. & B. N.

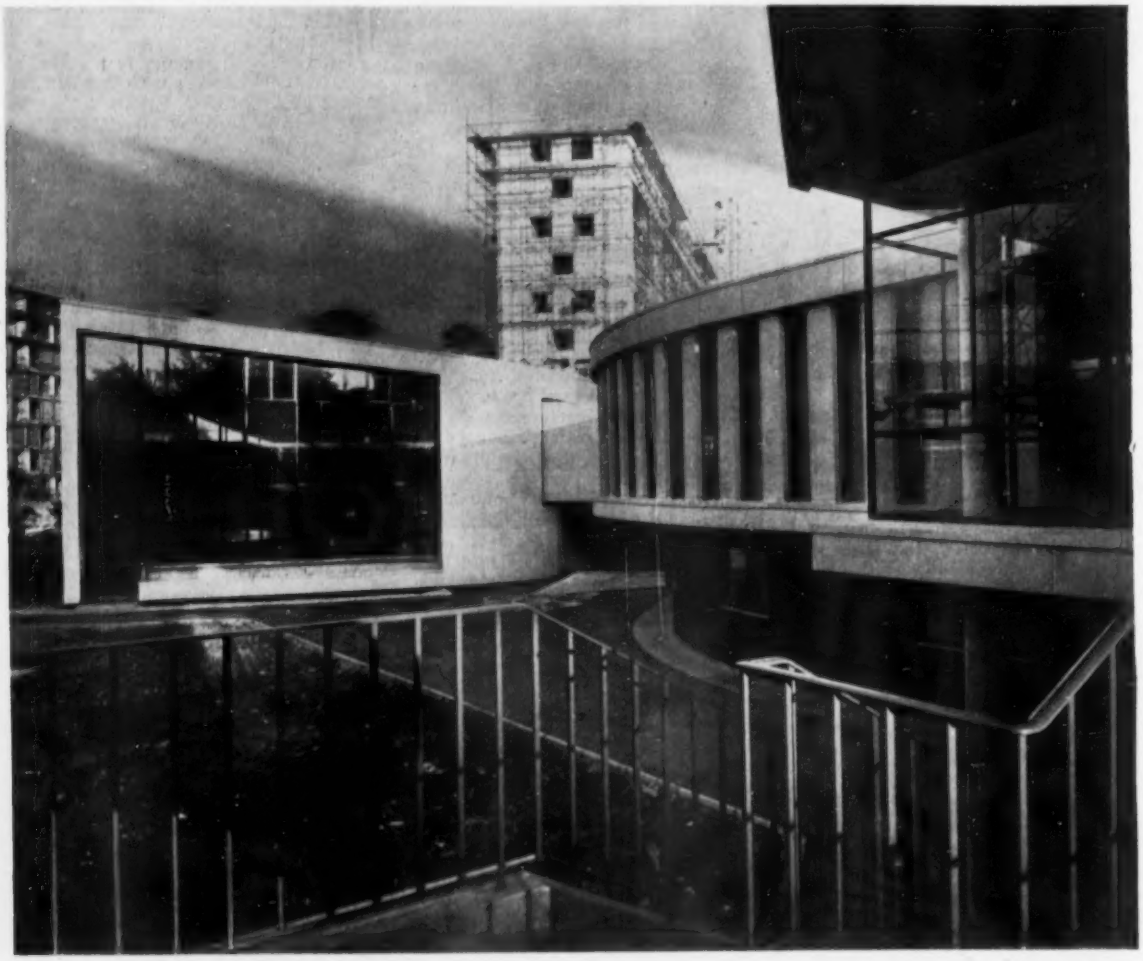
SIR,—Dutch Uncle correctly quotes me as saying that the formula for Modular Co-ordination is a simple one, but he should have gone on to report my oft-repeated contention that its application in practice is by no means simple, but will require long and complicated development. Modular Co-ordination is not a quack remedy that claims a quick and easy cure for our dimensional troubles.

Dutch Uncle is led from this misunderstanding to another, and even more serious one. Having assumed that the choice of a module is the key to the problem, he puts this at the end of a programme of "research." This is a reversal of the true situation; the assumption of a module of so many inches is the beginning, not the end.

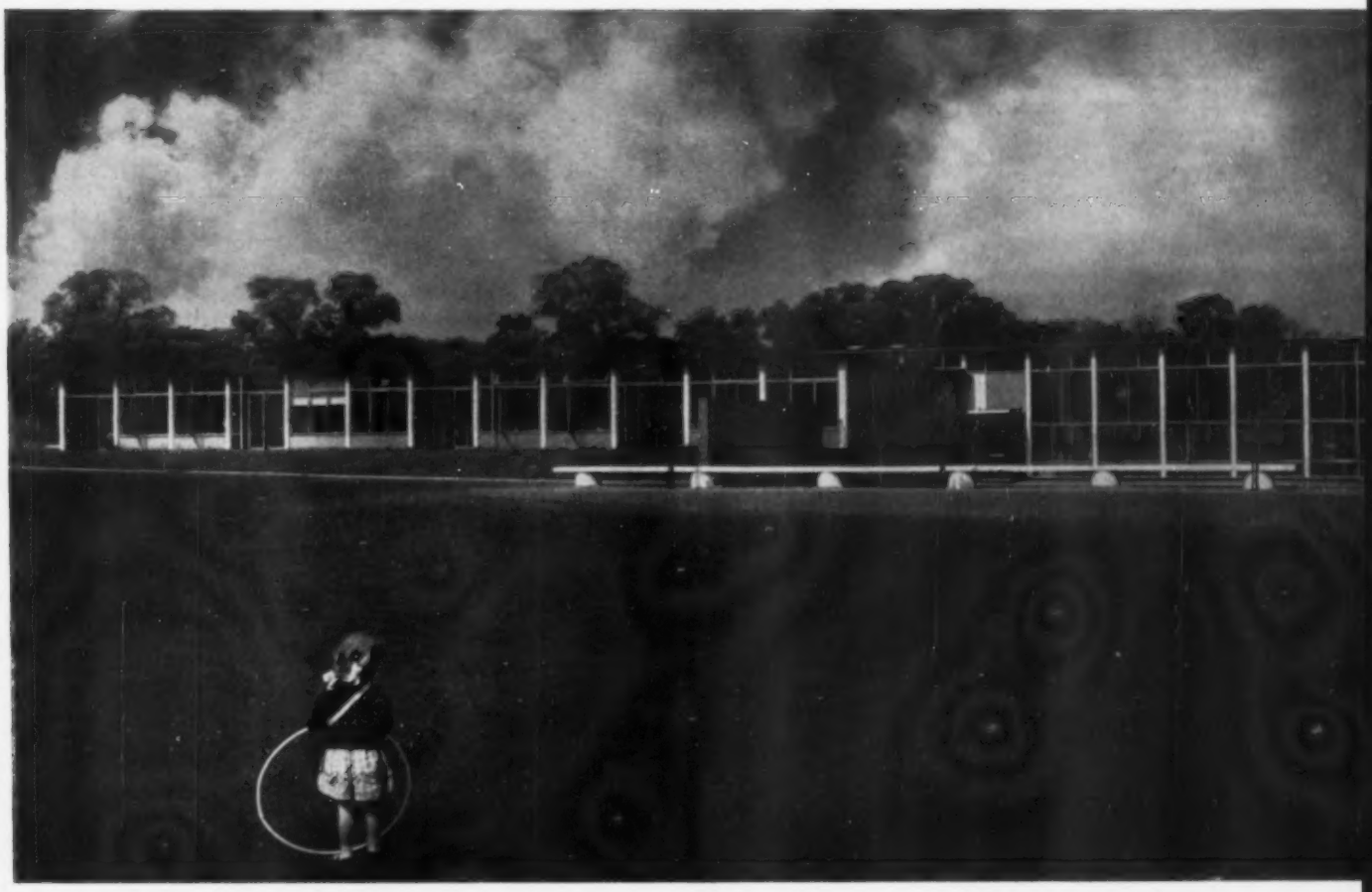
The respect that most of us rightly entertain for scientific method, leads people to demand "research" when confronted with any new problem; but it is essential to know what sort of research is appropriate to a particular case.

Modular Co-ordination is not a subject that is amenable to research in the popular sense of white coats and test tubes in a laboratory. It is more akin to those tackled by "operational research" in the war. Unless certain architects, manufacturers and others (most of them now members of the Modular Society) had pushed ahead and built the several hundred partially modular buildings that now exist in this country, there would be a lack of material for "research" to operate upon.

I am, etc.,
MARK HARTLAND THOMAS.



A view taken from west of the Bishopsgate Road Primary School, Paddington, showing the assembly hall (left) and louvred balcony on first floor (right). Beyond is one of the blocks of Halfields, the Bishopsgate Bridge Road Housing Scheme, of which the school forms an integral part. Architects for both school and housing: Drake & Lasdun.



LIVINGSTONE PRIMARY SCHOOL,

East Barnet, Herts.

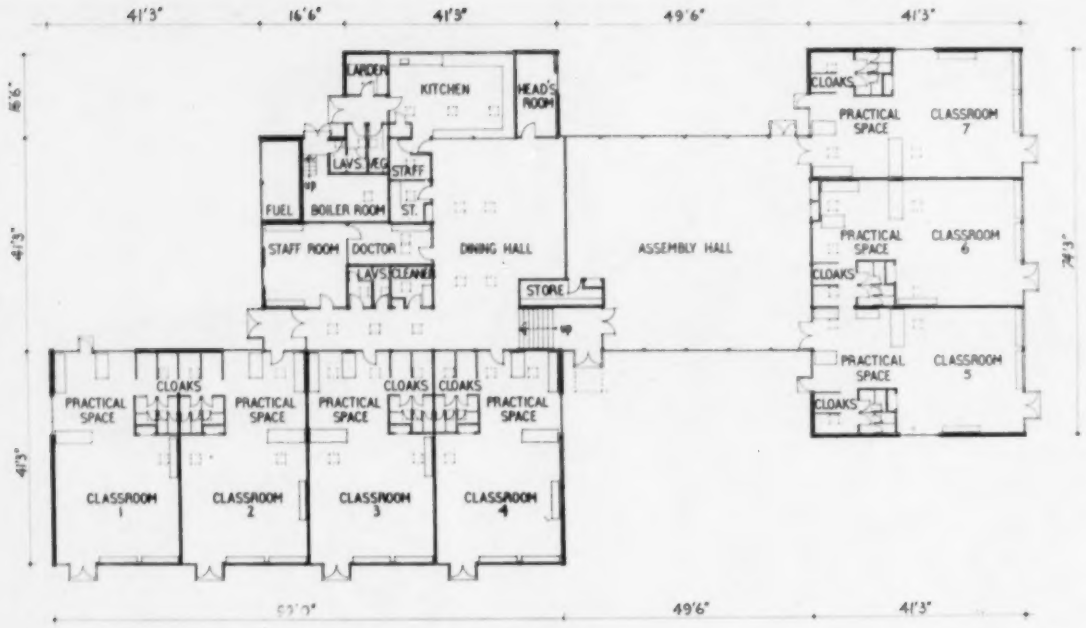
architects :

JAMES CUBITT & PARTNERS

THIS school, erected for the Hertfordshire County Council, is one of a number built from units of the "Hills system." This unit has a grid dimension of 8ft 3in in plan and 1ft 9in in height.

This project was one of the first under the reduced budget and had to be built at a maximum cost of £140 per place. The planning, therefore, apart from the obvious architectural reasons, had to be a simple as well as a very economical one.

With the sizes of classrooms and all other rooms fixed, the problem was therefore to plan a school, virtually without corridors. This could only be achieved by using the Assembly Hall, not only as the connection between senior and infant classrooms, but also to enter the maximum number of classrooms from this large communal space. In fact, all three classes for infants and two of the four senior classes, are entered this way. Also, the access to one classroom through another, made it



Left : Assembly windows and entrance doors facing South.

Below : Classrooms and assembly hall from the entrance to South-East.

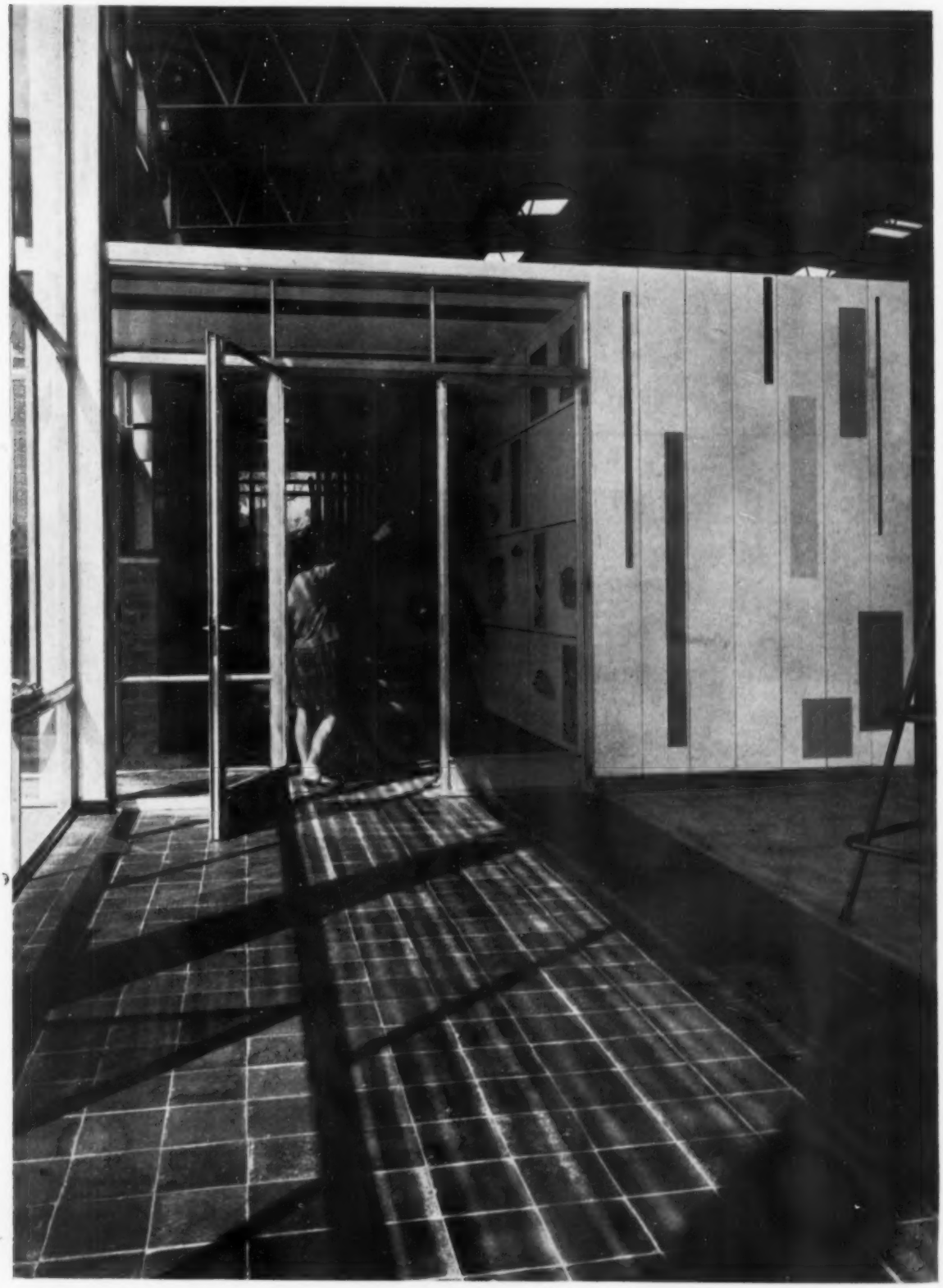
Livingstone School

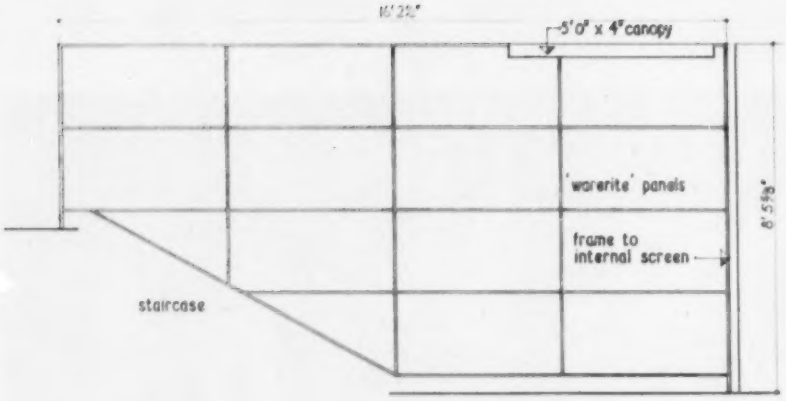
possible to design this school, with only two 8ft 3in squares as corridors.

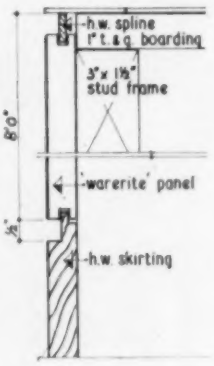
The contours of the site permitted the change of level of 4ft between senior and infant classes, which made it possible to carry through the roof level over Assembly and Dining Halls.

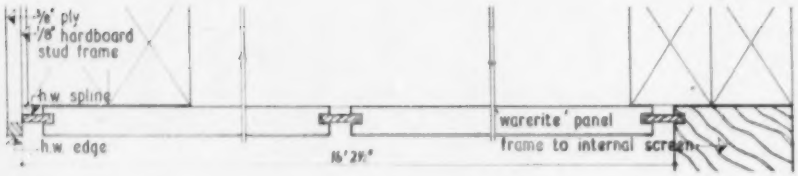
There were no special structural or cladding units used. The contract price was £42,000 and it included the special landscape features and the pictorial panel of the entrance.

Part of the store and entrance doors to assembly hall taken from inside the latter.







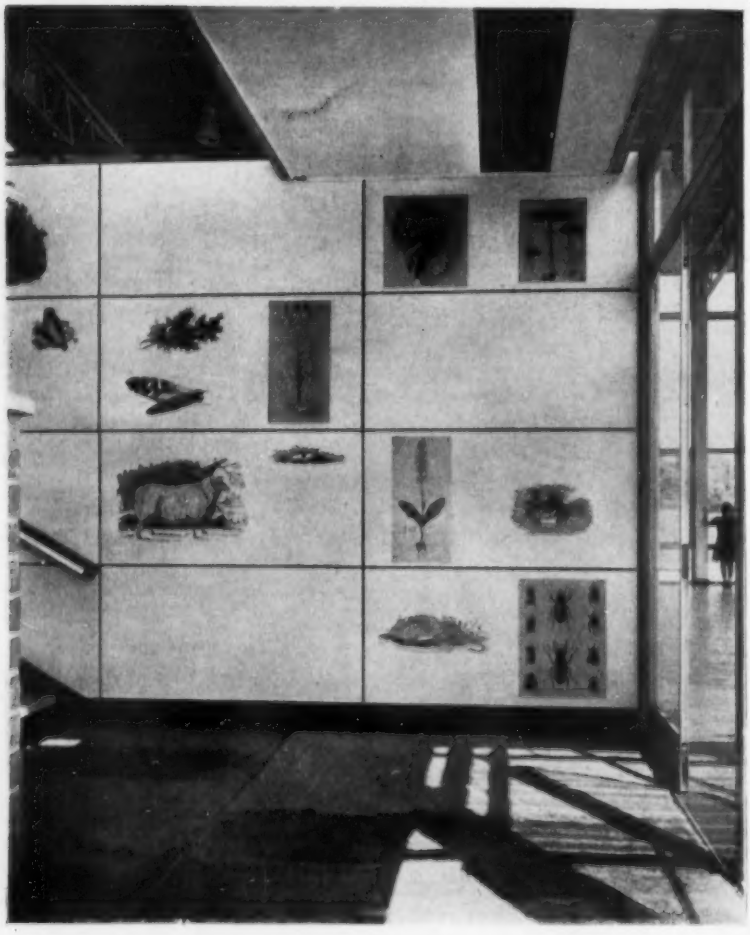


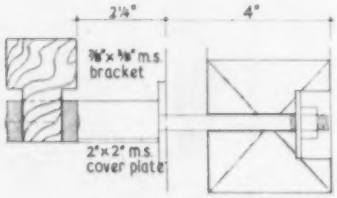
Panel & hand-rail details

Scales: ¼in = 1ft

¼ F.S.

Detail of Warerite panel on the south side of the store between dining hall and assembly hall.



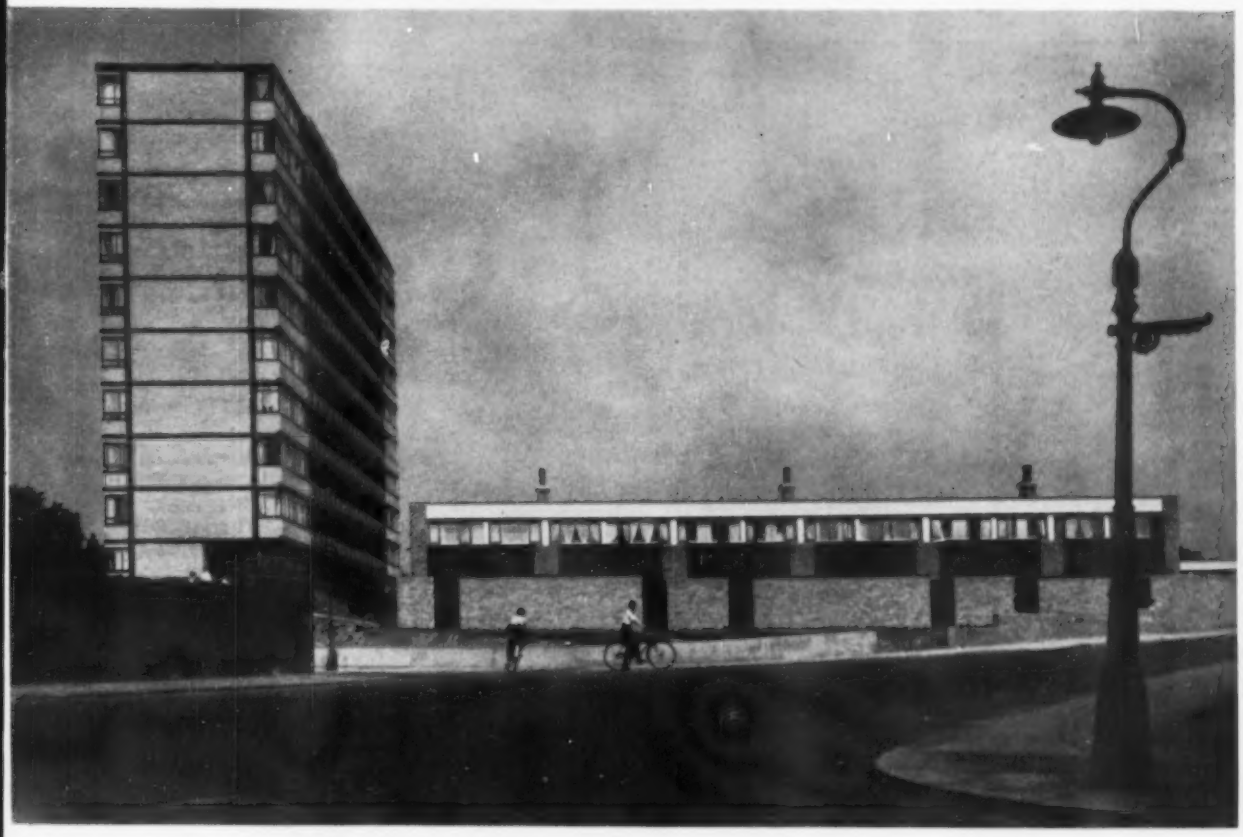


Livingstone School

General Contractors:

Francis Jackson Contractors Ltd.

Balustrades: F. W. Clifford, Ltd. *Blinds:* Horsley, Smith & Co., Ltd. *Bricks:* Uxbridge Flint Brick Co., Ltd. *Curtains:* Fishpool, Ltd. *Doors:* Gardiner Sons & Co., Ltd.; Jayanbee Joinery, Ltd. *Door Frames:* Hills (West Bromwich), Ltd. *Electrical Installation:* E. Wright & Co *Fencing:* Hills (West Bromwich), Ltd. *Fibrous Plaster:* F. W. Clifford, Ltd. *Flooring:* Hollis Bros., Ltd. (Wood Block, Cork and Thermoplastic); Langley (London), Ltd. (Tiled). *Flues:* Weatherfoil Heating System, Ltd. *Footscrapers:* Steddall & Co., Ltd *Fuel Hoppers:* Hills (West Bromwich), Ltd. *Furniture—Built-in:* G. Hammer & Co., Ltd. *Gates:* Hills (West Bromwich), Ltd. *Heating:* Weatherfoil Heating Systems, Ltd. *Ironmongery:* A. J. Binns, Ltd. *Kitchen Equipment:* M.O.W. *Lockers for Shoes:* G. Hammer & Co., Ltd. *Lavatory Partitions:* Walter Lawrence & Son, Ltd. *Light Fittings:* Falk Stadelmann & Co., Ltd. *Mats:* National Institute for the Blind. *Paint:* Docker Bros. *Paving, Play Equipment, Playground and Roads:* Wettern Bros., Ltd. *Plinth Cills:* Hall & Company. *Rooflights:* Hills (West Bromwich), Ltd. *Roofing Felt:* Permanite, Ltd. *Rainwater Pipes:* T.I. Aluminium, Ltd. *Sanitary Fittings:* Stitsons Sanitary Fit ings, Ltd. *Stairs—Finishes:* Langley (London), Ltd. *Structural Frame:* Hills (West Bromwich), Ltd. *Vents (Mechanical):* Greenwood's & Airvac Ventilating Co., Ltd. *Walls:* Carter & Co., Ltd. (Tiled); Orbit, Ltd. (External). *Waste Fitting:* Econa Modern Products, Ltd. *Windows:* Gardiner Sons & Co., Ltd.



LAMBLE STREET HOUSING SCHEME

for the Borough of St. Pancras

architects : POWELL & MOYA

THE site covers an area of 3.61 acres on which development was required at a density of 100 persons to the acre. The land was undeveloped, and was used as a junk yard and dumping ground. One of its main features is a large mound, or plateau, of built-up ground in the eastern half which rises about 10ft above normal ground level. The site as a whole slopes upwards to Lismore Circus to the west. A new road, which will ultimately be a through road, forms the eastern boundary. There is a railway cutting to the south, and the land to the east may be used for a new school. The buildings around are mostly domestic, with a height of two and three storeys.

From 30ft or more above the site there are extensive views over London and, to the north, over Parliament Hill fields.

Accommodation

The accommodation consists of one 10-storey block of flats and two-storey houses. The block of flats contains 10 one-room flats, 10 two-room flats and 30 three-room flats; the basement contains pram and bicycle stores. The houses number 44 with four rooms and 5 with five rooms. The first part of the development, illustrated here, consists of the block of flats and 22 of the four-room houses. The remainder will be built later.

Planning

As the flats are small, access by means of balconies has been chosen for reasons of economy. No habitable rooms are over-shadowed by these balconies, which are kept to a short length. The main staircase, lifts and escape staircase are almost in the centre of the block, but the arrangement is asymmetrical, with three flats per floor on one side (one room, two room and three room) and two on the other (both three room). One of the lifts is an 8-passenger lift (or pram lift) stopping at all floors, and the other is a 4-passenger lift stopping at basement, ground, 3rd, 6th and 8th floor levels only.

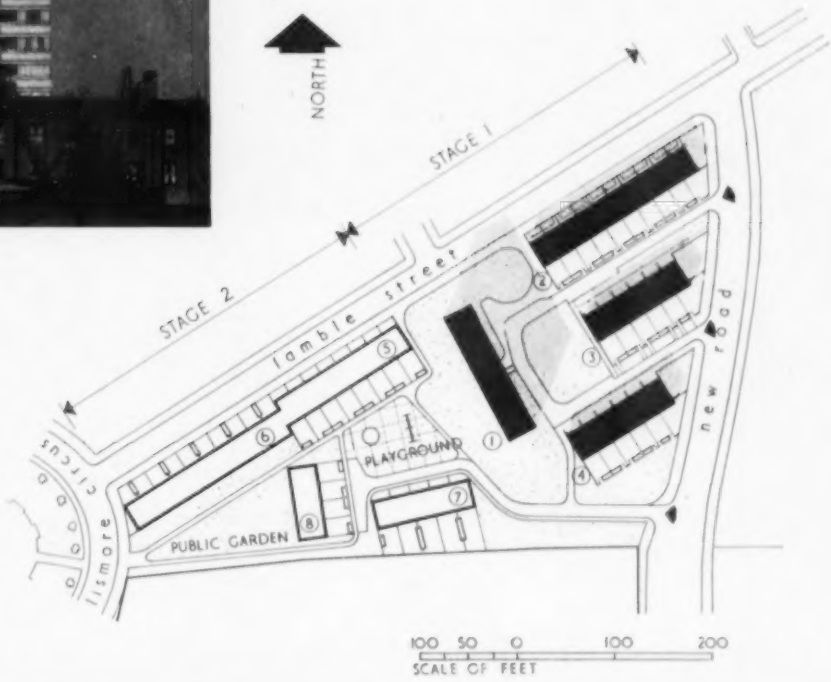
Access from the site of the flats is by road and path at the lower level, with an additional path up the slope of the mound giving access at ground-floor level.

The houses already built are all of the four-room type.

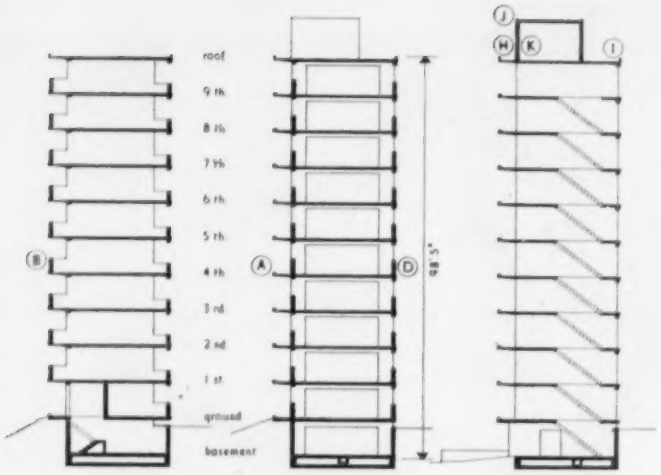
[Continued on page 488

Externally the reinforced concrete structure of the flats is painted dark red and light grey; the soffits are white. Bricks on exposed external faces are white—flint-lime, and at the back of access balconies—blue engineering bricks. Window frames are black with white opening lights, except at the back of access balconies where window frames are all white. Private balconies (recessed) use combinations of dark olive green, bright red and canary yellow. The access balconies are olive green, cherry red and, at the ends, bright red. Staircase soffits are painted bright red, and the tank room light grey. The recessed walls at the N.E. and S.E. corners at ground floor level are painted canary yellow.

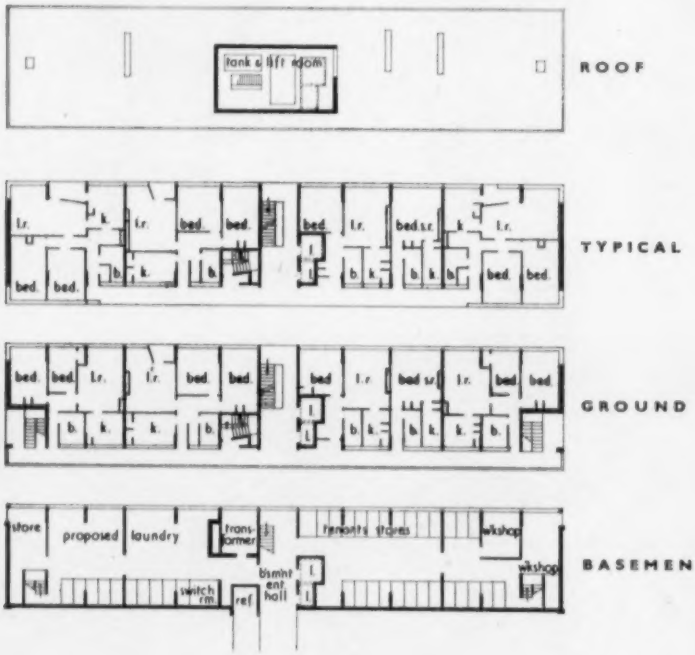
Lamble Street Housing

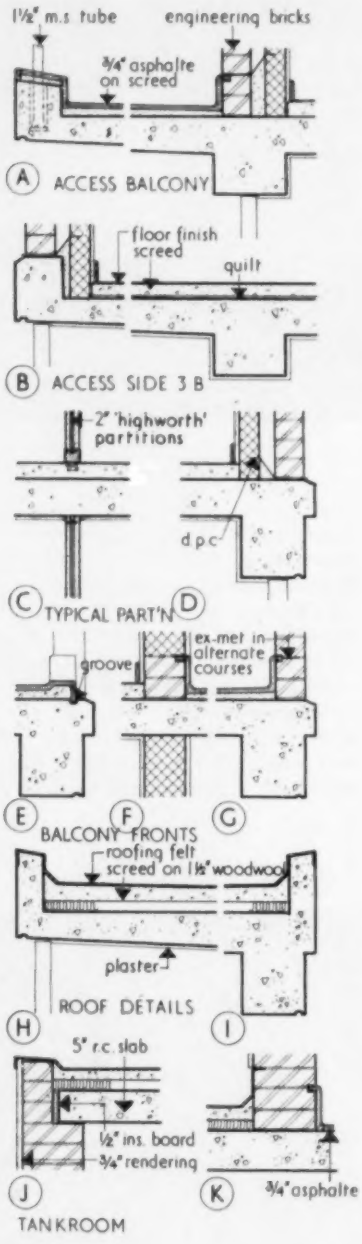


Facing bricks of the houses are London stocks. The rendered panel, first floor, is dark blue-black spatter-dash finish, rubbed down about 48 hours after application. Fascias are white; window frames—white, with opening light frames black; porches and external doors—in combinations of some of the following colours:—dark red, orange-red, yellow, olive green, grey, black and white.



PLANS AND SECTIONS OF FLAT BLOCK





DETAILS. SCALE: ½ in = 1'

Lamble Street Housing

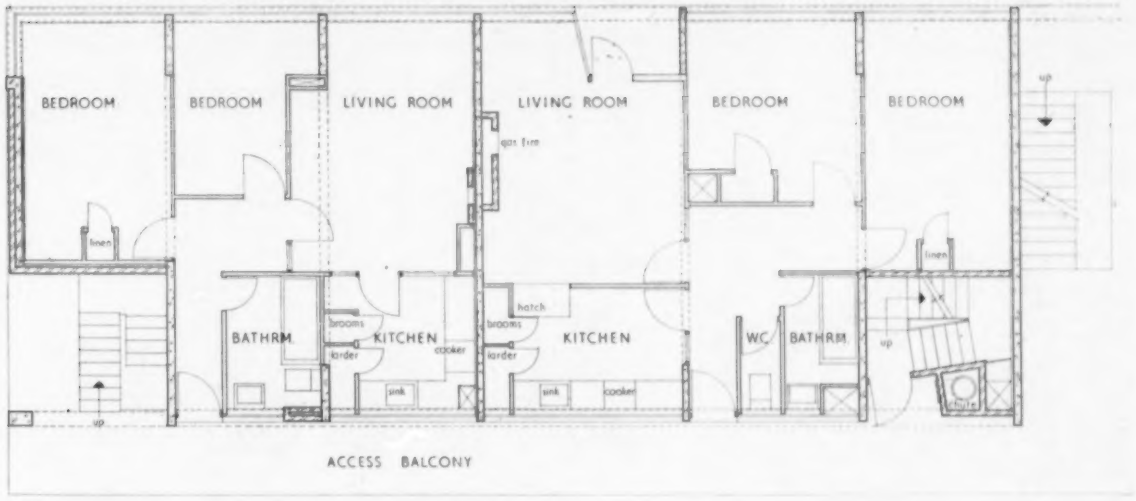
Continued from page 485]

Each house has a store at the front and also a garden store, which automatically forms the end wall to the private garden.

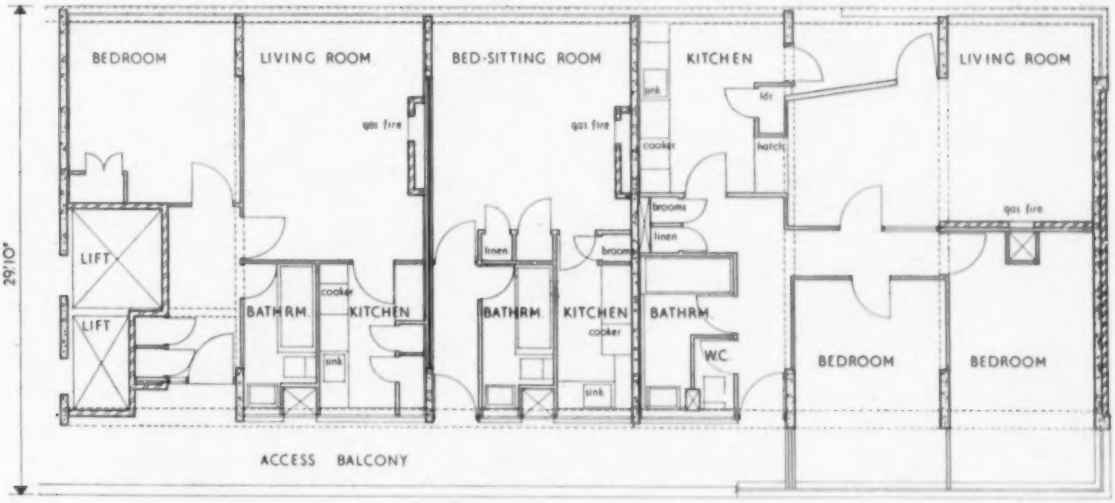
Construction: Flats

The construction of the flats is as follows: Reinforced concrete basement on mass concrete foundations. Superstructure—6in reinforced concrete party walls and intermediate reinforced concrete frames. Floors consist of precast prestressed beams combined with hollow clinker pots with structural concrete topping. They are 6in thick. The reinforced concrete structure is generally exposed externally. The non-structural infilling consists of strip windows and of apron walls of cavity construction (4½in brick air space 3in clinker block). At the back of all access balconies windows are of wood. On exposed faces windows are of wood with galvanized steel opening lights. Partitions have a plasterboard core, are then wired on either side and then plastered, forming rigid reinforced plaster partitions. Floors are insulated

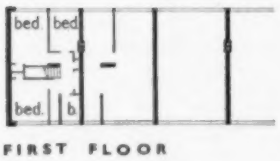
[Continued on page 490



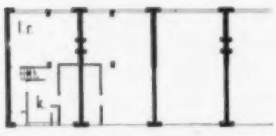
TYPE PLANS OF FLATS. SCALE 10ft – 1in



HOUSE PLANS

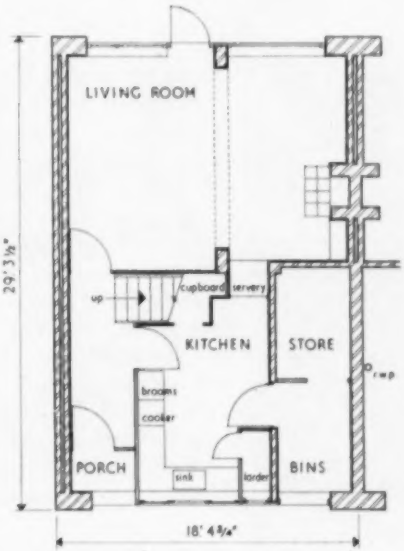


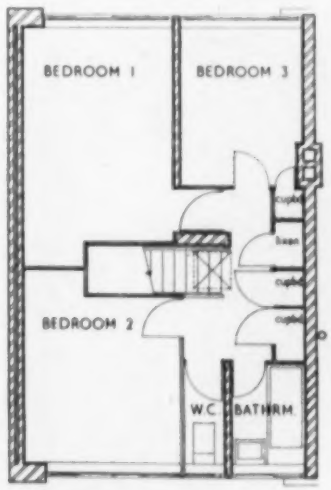
FIRST FLOOR



GROUND FLOOR

PART TERRACE





Lamble Street Housing

Architects: Powell & Moya

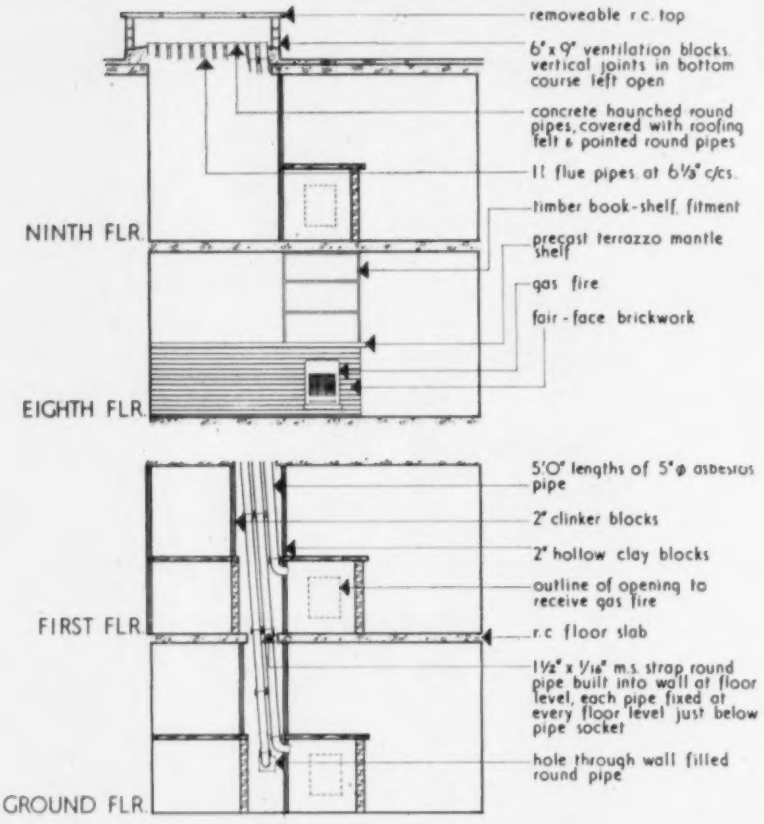
Consulting Engineers: Scott & Wilson, Kirkpatrick & Partners

Quantity Surveyors: Davis, Belfield & Everest

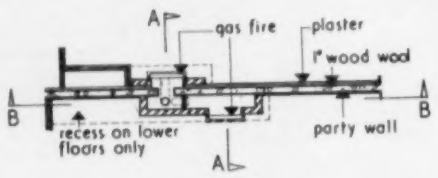
Borough Engineer: C. S. Bainbridge

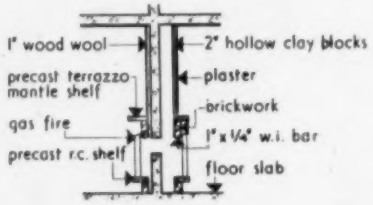
General Contractors Sir Robert McAlpine & Sons Ltd.

Asphalte Paving and Roofing: Excel Asphalte Co., Ltd *Balcony Fronts (Private and Access):* F. A. Norris & Co., Ltd. *Boilers:* North Thames Gas Board. *Booster Pumps for Water Supply:* G. N. Haden & Sons, Ltd. *Bricks:* Eastwoods, Ltd. (London Stock); Stoneware, Ltd. (Blue Engineering); Uxbridge Flint Brick Co., Ltd. (Flint Lime). *Cast-iron Bollards:* Mather & Smith, Ltd. *Chimney Pots:* Robinson & Dowles. *Cill Tiles:* McKenzie & Brytiles, Ltd. *Cupboard Doors:* John Saidd & Sons, Ltd., *Doors (External):* Walter Lawrence & Sons, Ltd. *Electrical Installation:* Phoenix Electrical Co. (London), Ltd. *Felt Roofing:* Wm. Briggs & Sons, Ltd. *Fencing:* Penfold Fencing & Engineering, Ltd. *Gas Equipment:* North Thames Gas Board. *Glazing:* John Hall & Sons, Ltd. *Hollow Clinker Infilling Floor Blocks:* O.B.O. Construction Co., Ltd. *Insulating Quilt:* Wm. Kenyon & Sons, Ltd. *Ironmongery:* Alfred G. Roberts, Ltd. *Iron Stair Balustrades:* S. W. Farmer & Sons, Ltd. *Iron Basement Partitions:* McLaren, Johnston & Co., Ltd. *Kitchen Fittings:* Jayanbee Joinery, Ltd. *Lifts:* Express Lift Company, Ltd. *Lamp Standards for Estate:* T. W. Palmer (Merton Abbey), Ltd. *Lightning Conductor:* W. J. Furse & Co., Ltd. *Lighting Reflectors for Estate:* Benjamin Electric Co. *Name Plates:* Hills, Ltd. *Paint:* Inertol Co., Ltd. (Rubber Based); Hadfields (Merton), Ltd. (Oil); Walpamur Co., Ltd. (Water). *Painting:* South London Decoration Co., Ltd. *Plate Racks:* Modern Industries (London), Ltd. *Plastering:* The Plaster Decoration Co., Ltd. *Plumbing:* G. N. Haden & Sons, Ltd. *Precast Concrete:* Girlings Ferro-Concrete Co., Ltd.; Quelcrete, Ltd. *Prestressed Concrete Floor Joists:* Costain Concrete Co., Ltd. *Refuse Chutes:* Broads Manufacturing Co., Ltd. *Rendered Panels "Stonite":* New Floor Installations, Ltd. *Sanitary Fittings:* Stitsons Sanitary Fittings. *Storage Tanks —Galvanized Steel:* Richard Thomas & Baldwins, Ltd. *Tanking to Basement:* Wm. Briggs & Sons, Ltd. *Tarmacadam:* Tarpaving & Tarmacadam, Ltd. *Terrazzo Precast Slabs:* W. B. Simpson & Sons, Ltd. *Tiling:* Marley Tile Co., Ltd. (Thermoplastic); Parkinsons (Wall Tiling), Ltd. (Wall and Floor). *Windows:* Crittall Manufacturing Co., Ltd. (Metal); Walter Lawrence & Sons, Ltd.


NINTH FLR.
EIGHTH FLR.
FIRST FLR.
GROUND FLR.
removeable r.c. top
6" x 9" ventilation blocks, vertical joints in bottom course left open
concrete haunched round pipes, covered with roofing felt & pointed round pipes
11 flue pipes at 6⅛" c/cs.
timber book-shelf fitment
precast terrazzo mantle shelf
gas fire
fair-face brickwork
5'0" lengths of 5"φ asbestos pipe
2" clinker blocks
2" hollow clay blocks
outline of opening to receive gas fire
r.c floor slab
1½" x ⅛" m.s. strap round pipe built into wall at floor level, each pipe fixed at every floor level just below pipe socket
hole through wall filled round pipe

Arrangement of gas flues. Scale: 8ft = 1in





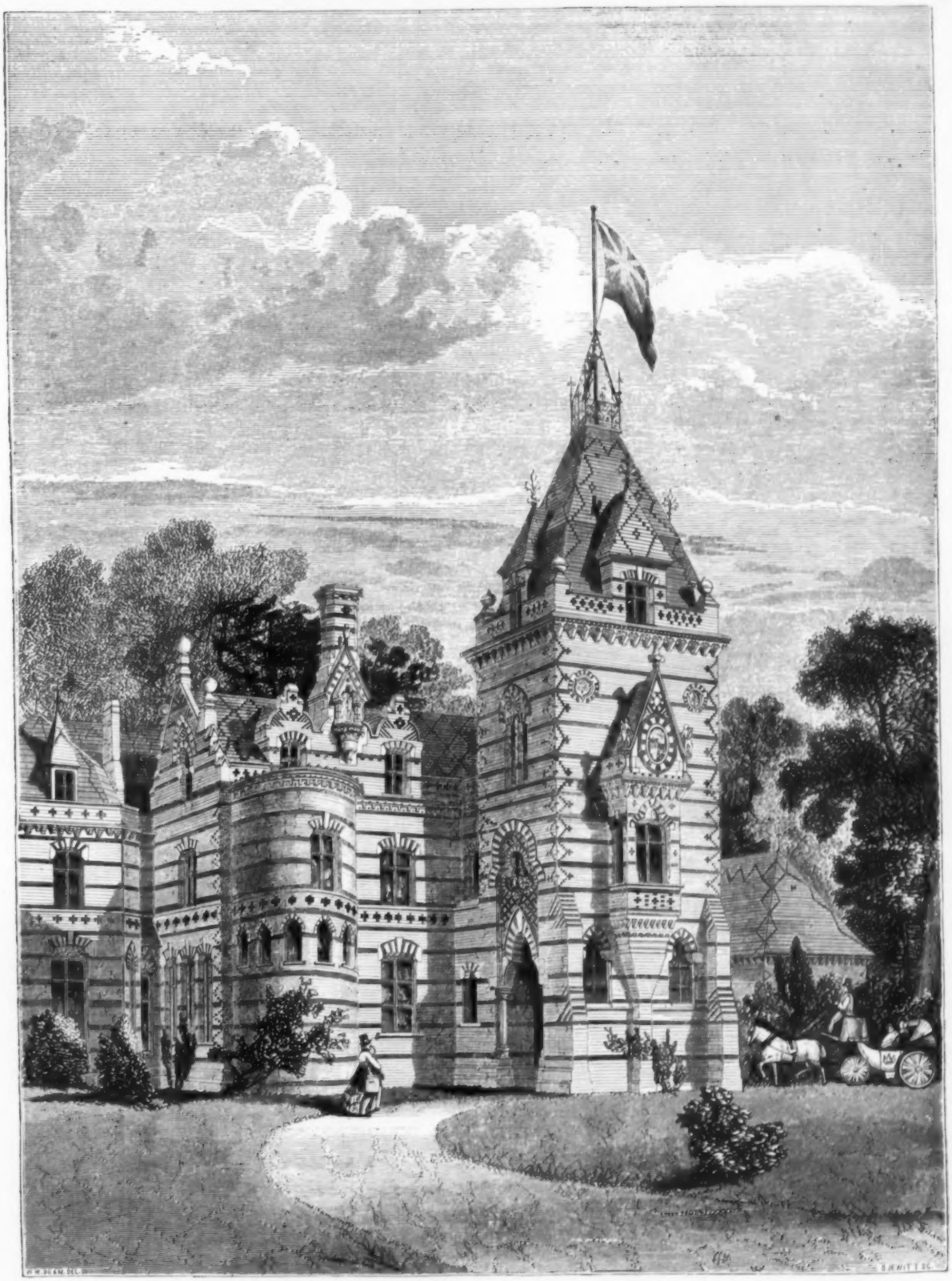
Continued from page 488

against sound with glass silk quilting on which cement screed and thermo-plastic floor tiles are laid. Ceilings are plastered.

There is a gas fire in each living room, and electric points are provided in all rooms. Water heating is by balanced flue instantaneous gas water heaters.

The houses are of load-bearing construction consisting of brick cross-walls and timber joisted floor and roof spanning on to these walls. The non-load bearing first floor panels have an outer skin of 4½in brick, rendered, and an inner skin of 2in clinker blocks, plastered. Windows are of wood. Partitions and finishes generally are as in the flats, except that first floors are covered with T. & G. boarding.

There are open fire-back boilers in the living rooms for space heating and water heating.



"There is always something absurd about the past," wrote Sir Max Beerbohm, but there is a lot to admire in the highly skilled and laborious engraving and reasonably honest representation of the Mansion for Lord Calthorpe, designed in 1860 by Mr. S. S. Teulon, Architect. This is typical of the illustrations in "The Building News" in its earlier years. Reproductions of photographs by the half-tone process first appeared in 1907.

THE ARCHITECT and Building News,
21 October 1954

General purpose classroom, first floor

SECONDARY

ARCHITECT :
CHARLES PIKE

Main entrance and foyer

Classroom corridor, second floor

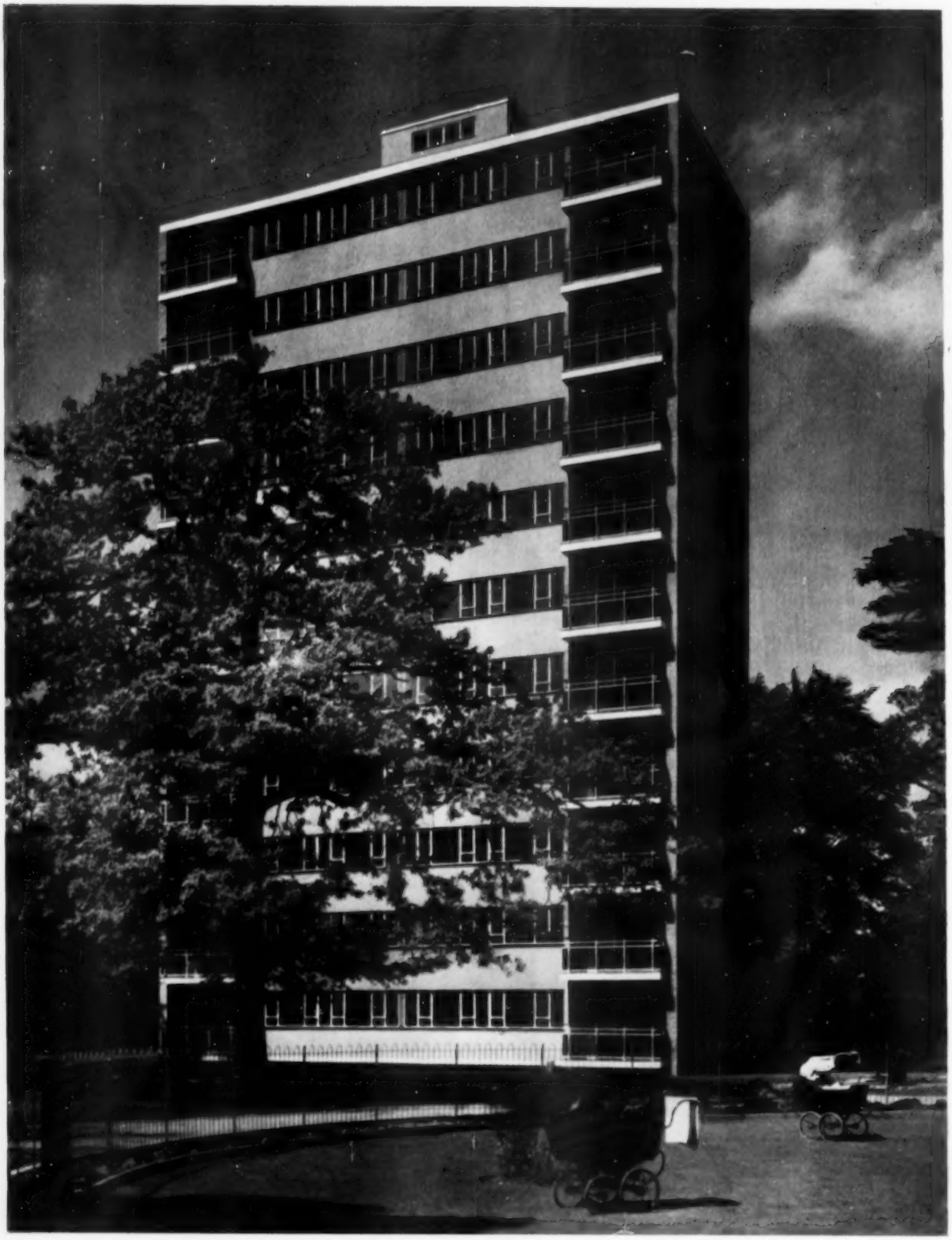
SCHOOL, KIDBROOKE FOR THE L.C.C.

(SLATER, UREN & PIKE)

Colour, an essential element of design, particularly in schools, has been employed extensively at Kidbrooke. Where there are, of necessity, a number of repeating units, colour has enabled the architect to impart individuality where otherwise monotony might occur.

The physical form of wall spaces, ceilings, joinery and balustrades has been emphasized or reduced in importance where architecturally desirable. In the case of stair balustrades, the protective needs do not always coincide with the desired proportions but spasmodic emphasis in bold colour can achieve this aim while adding gaiety and interest. It has been possible to relate entrances and floor levels with a dominant colour both on walls and floors, with the object of helping children to become acquainted with the building, particularly in the early stages.

Staircase, centre block



In contrast to the palatial private house of 1860, local authority housing is characteristic of the present period, and to represent it we have chosen the first point block to be completed by the largest local authority in the world, the L.C.C. Eleven-storey flats, Ackroydon Estate, Wandsworth. Architect to the Council, Dr. J. L. Martin.

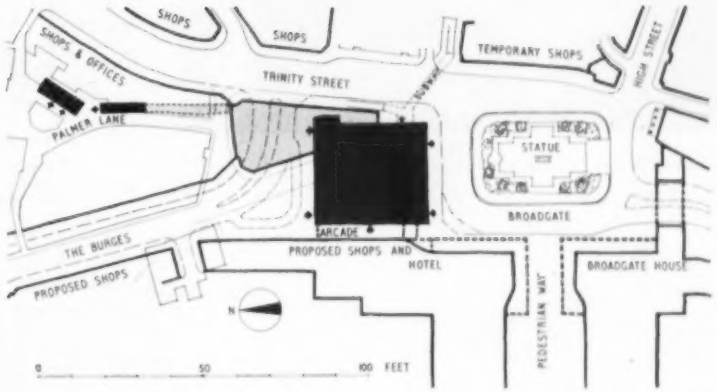
Looking North across Broadgate

OWEN OWEN DEPARTMENT STORE, COVENTRY

architects:

ROLF HELLBERG

& MAURICE HARRIS



SITE PLAN

THE site offered to Owen Owen by the Coventry Corporation consisted of two separate and distinct units above and below ground level. The site for the superstructure was an island site north of Broadgate, surrounded by roads on three sides and an arcade on the west. It is nearly square and the levels along the road frontages fall some 12ft 6in from the south-west corner round to the north-west.

Below ground, the Corporation offered the triangular basement of the previous store, destroyed by fire during the Coventry blitz, with its access tunnel and a detached loading dock.

Requirements

The Corporation required that the superstructure should be 60ft high to roof level on the Broadgate frontage, this level being maintained for Trinity Street, and that it should be faced in materials similar to Broadgate House.

The promoters required a building with engineering services, receiving and despatch in the basements, sales, stock and offices in the superstructure, with the proportions of sales and non-sales space properly balanced.

It was a condition that the building should be in reinforced concrete to economize in steel.

Planning

Basically, the basement layout has not varied from early schemes. The sub-basement consists of the high turning space for despatch vans at the tunnel end, the remainder being divided longitudinally into despatch areas and engineering services. The basement is used for receiving and, owing to the falling ground levels, only occupies about two-thirds of the sub-basement area.

Detail of Tower

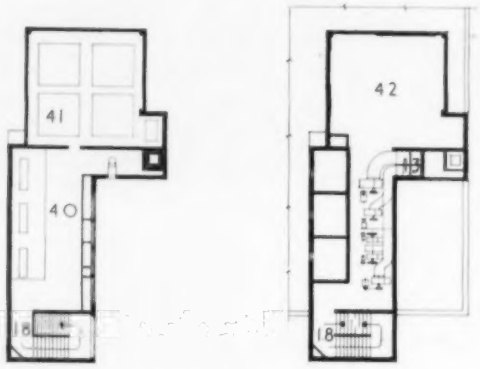
Owen Owen Store

The accepted scheme had, in addition to the two basements, a main building consisting of five sales floors, of which two were at street level, and a contiguous stock building of equal height containing seven floors.

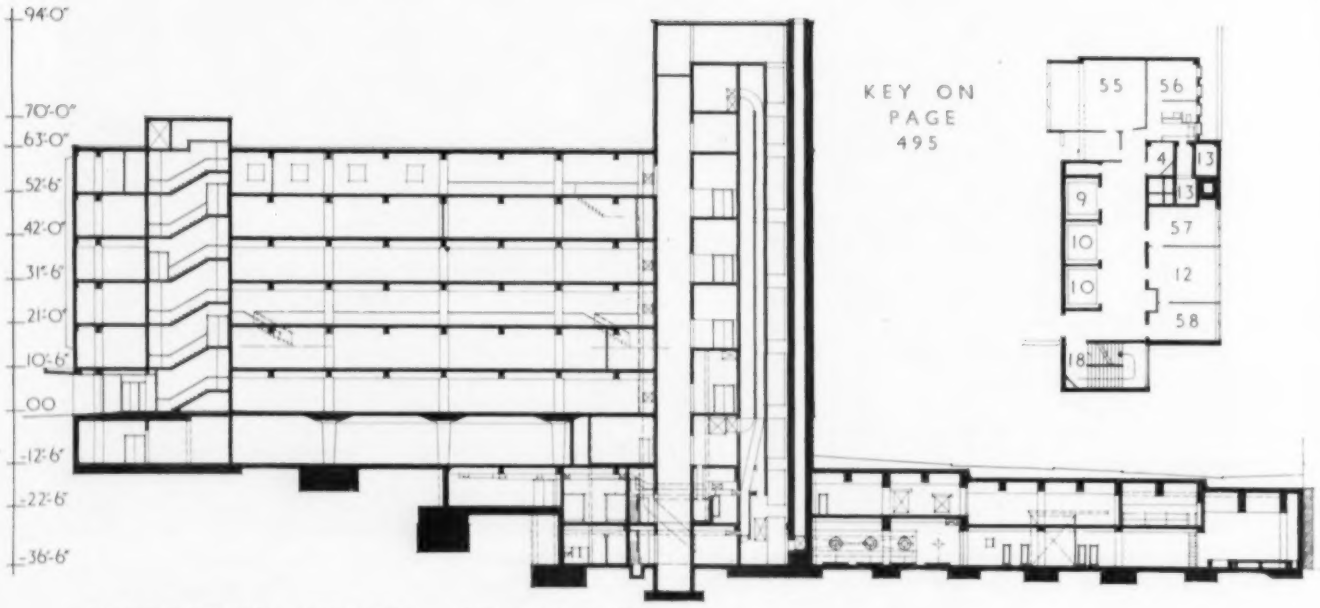
At roof level, a penthouse accommodating public and staff restaurants, roof terraces, kitchens and staff offices has yet to be built. A south-west tower housed fans for the public restaurant and lift machinery, and a very large tower three storeys above roof level at the north-east corner housed tanks, main fans and lift motors.

The sales floor areas vary from 20,000 to 23,000 sq ft owing to extensions into the mezzanine areas of the stock building, giving a total sales area of approximately

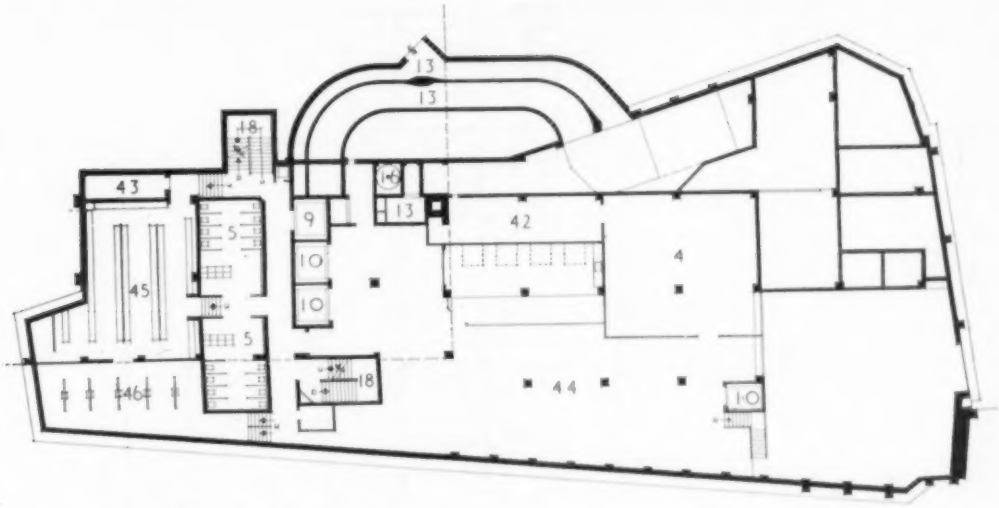
[Continued on page 496



TOWER PLANS. TOP LEFT: LIFT MOTOR ROOM. RIGHT: FAN ROOM. BELOW RIGHT: OFFICE ACCOMMODATION.



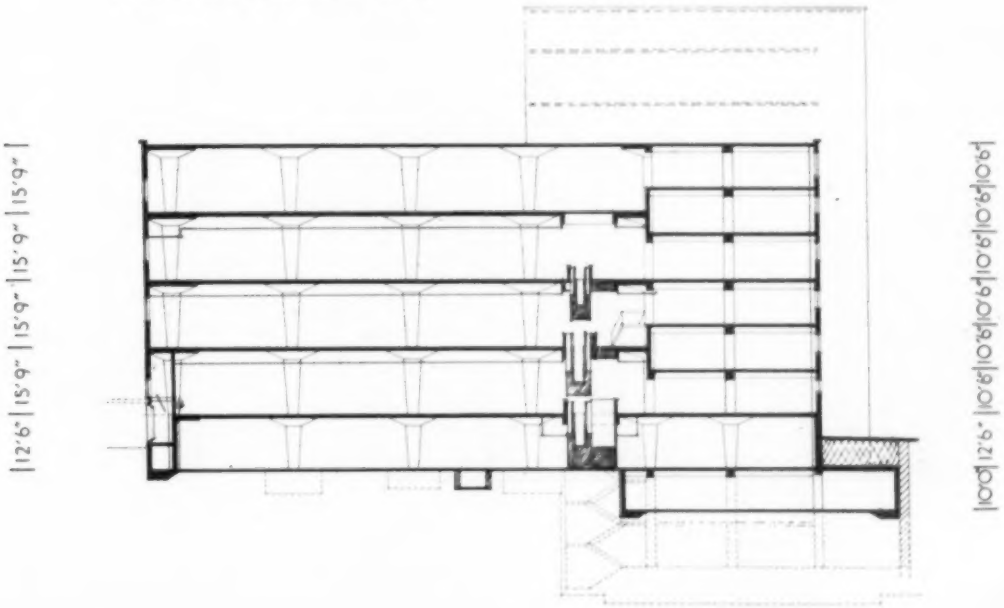
LONGITUDINAL SECTION. Scale: 1in = 40ft

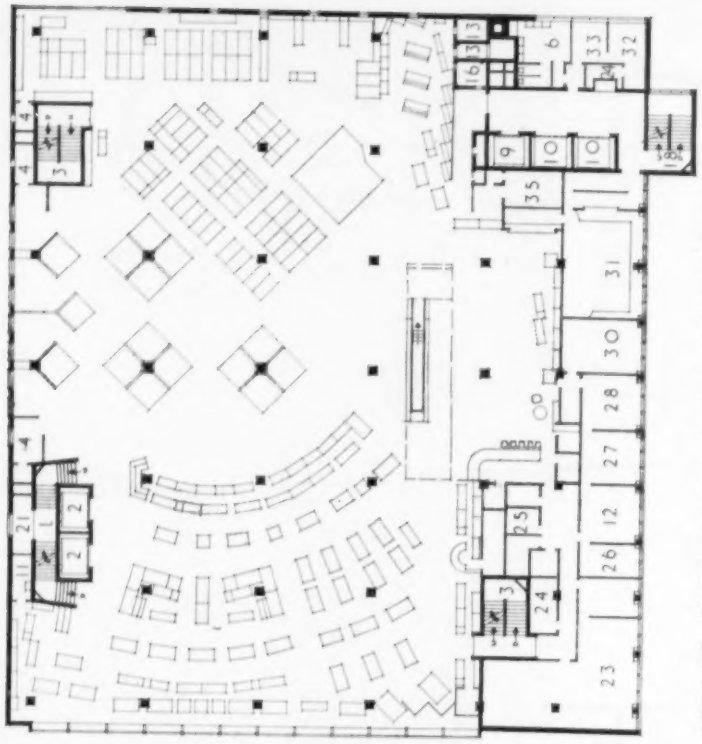


BASEMENT PLAN—Receiving
Scale: 1in = 40ft

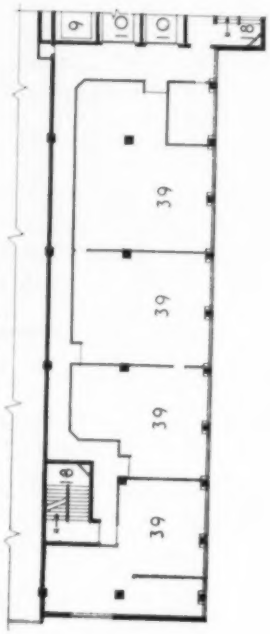
SUB-BASEMENT — Dispatch

TYPICAL CROSS-SECTION

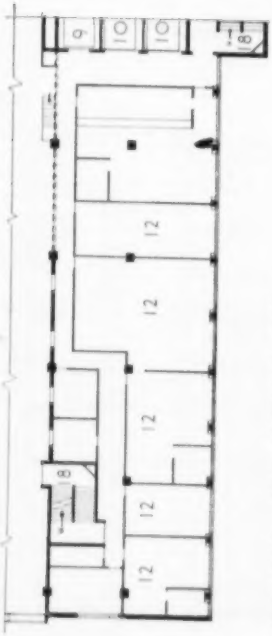




SECOND FLOOR—Travel Bureau and Furniture

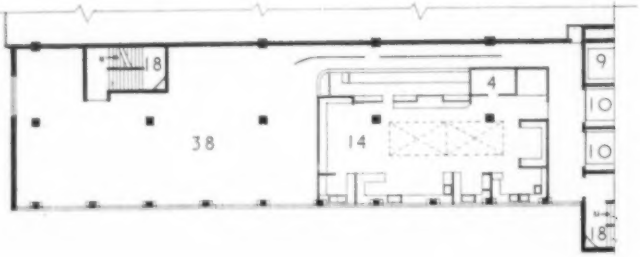


THIRD MEZZANINE—Workrooms



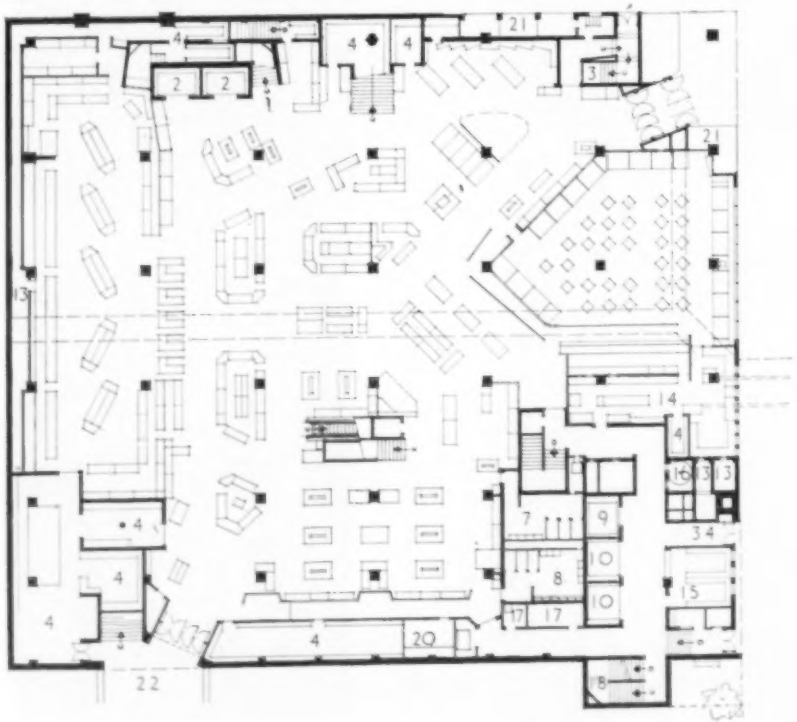
FOURTH MEZZANINE—Offices

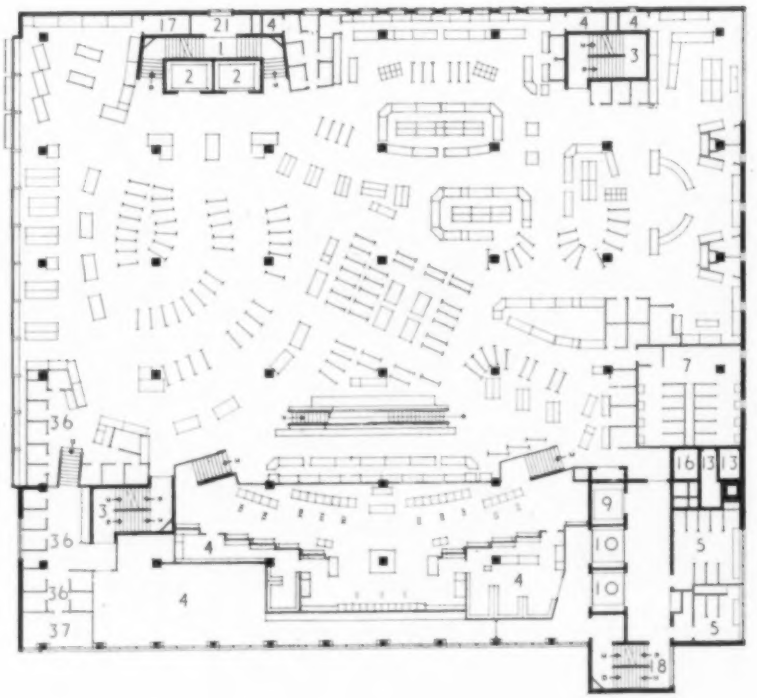
GROUND FLOOR—Haberdashery



FIRST MEZZANINE — Staff Canteen

LOWER GROUND FLOOR — Ironmongery, Food and Cafeteria





FIRST FLOOR — Clothes

SECOND MEZZANINE — Shoes

Owen Owen Store

KEY TO ALL PLANS

1. Main staircase. 2. Public lifts. 3. Escape stairs. 4. Store. 5. Female staff lavatories. 6. Male staff lavatories. 7. Female public lavatory. 8. Male public lavatory. 9. Staff lift. 10. Goods lift. 11. Cleaner. 12. Office. 13. Duct. 14. Kitchen. 15. Parcel office. 16. Parcel shute. 17. Cleaner. 18. Staff stairs. 19. Fitting rooms. 20. Cash office. 21. Display. 22. Subway. 23. Hire Purchase offices. 24. Batteries. 25. Hire purchase interview rooms. 26. Maintenance manager. 27. Merchandise manager. 28. General manager. 29. Accounts. 30. Mail orders. 31. Cashier. 32. Autoroom. 33. Manuals. 34. Goods entrance. 35. Studio. 36. Fitting rooms. 37. Pressing. 38. Cafeteria. 39. Workrooms. 40. Lift motor room. 41. Tank room. 42. Fan room. 43. Strong room. 44. Receiving room. 45. Cloakrooms. 46. Time clocks. 47. Boiler room. 48. Despatch dept. 49. Van space. 50. Tunnel. 51. Switchgear. 52. Ventilating and sprinkling plant. 53. Waste paper baling. 54. Sewage pumps. 55. Staff training room. 56. Welfare. 57. Controller. 58. Wages.

Owen Owen Store

Continued from page 492]

100,000 sq ft (10,000 sq m). The proportion of sales to service area at this stage was 60 per cent : 40 per cent.

The total volume of the building, not including tunnel and loading dock, was just under 2,390,000 cu ft (71,350 cubic metres).

The flow of goods into the building operated from vans to trucks in the detached loading dock, down the tunnel and up to the receiving room at basement level by hydraulic lift or by conveyor, then on by goods lift to mezzanine stock floors where marking off and stocking take place individually by departments.

Despatch was by parcels chute or lift to sub-basement level and thence by vans from the van space at the north end.

Construction

The engineers decided to ignore the 2ft 3in existing basement walls structurally and construct a beam and slab reinforced concrete basement within them. This structure had to be designed to take the weight of the new road construction and full Ministry of Transport loadings. A sub-floor drainage system takes any seepage from the perimeter to a sump, where an automatic pump discharges up to the street level sewers. The lower portion of the walls, the floor slab and foundation were all waterproofed with bituminous waterproof membrane, the upper walls being treated with bitumen paint.

The main superstructure contains two forms of construction. In the sales area, flat slab floors are supported by mushroom columns on a 27ft 6in grid, and in the stock mezzanines normal beam and slab construction is employed.

For the construction of the mushroom columns, pockets of a depth sufficient to accommodate the bond length of the column reinforcement were formed in the head and drop of the column underneath. Into these pockets the column reinforcement was inserted, thus dispensing with the need for splice lengths of reinforcement and avoiding congestion of steel in the reduced section at the feet of the columns.

It was originally intended that the external concrete walls should be permanently shuttered internally with cementitious wood wool slabs and externally with facing brick, where used. The lower ground floor was lined in this way but experience showed that almost as much shuttering was needed to prevent movement in the slabs as would be required for normal working. Similarly the use of half brick lining externally was dropped owing to the small lifts possible and to the consequent slow progress.

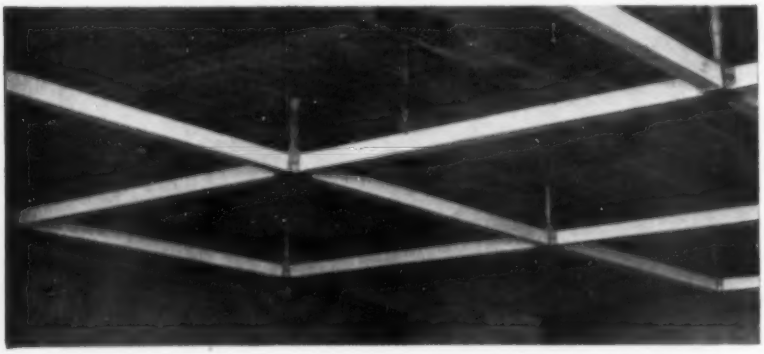
The majority of the external walls are constructed of reinforced Phomene concrete of 90 lb/cu ft density. This method gave the required insulation and provides sufficient strength to resist wind loading on an unsupported height of 15ft 9in between floors. The brickwork was added later, the concrete being painted with bitumen in the usual way before laying took place. It was found to be a quick and economical method.

External Treatment

The client asked only that the building should grow old gracefully, which is as near a perfect specification as any architect can wish. The elevational difficulties resulting from the varying numbers of floors, five in the adjacent hotel, four in the sales area and six in the stock section, were solved by treating the sales section as the dominant feature. It is expressed by a great window wall, some 44ft high and 110ft long, set in a projecting frame in a travertine background. The east end of the façade has a stop panel of brickwork.

On the east frontage, the different character of the stock and office floors is expressed by continuous high level windows alternating with long strips of orange-red briquettes. The brickwork is reinforced horizontally with galvanized wire passed through the loops of the wall ties and was found to be very speedy in erection. The continuous windows are stopped by the projecting staircase tower, faced in concrete slabs with a grey-green granite surface, and the elevation is stopped by a vertical brick panel as on the south front.

The east end of the north façade uses fluted concrete between windows of the staff rooms, but the sales section of the building is treated as a great cliff of brickwork, pierced only by porthole windows. The west face of the store is of brick punctuated with windows.



Structure for the suspended ceiling

Entrance, from lower ground floor

Principal window display

Access to second mezzanine level

Second mezzanine, shoe department

structural consultants: Scott & Wilson, Kirkpatrick & Partners

heating and ventilating consultants: G. Roger Preston & Partners

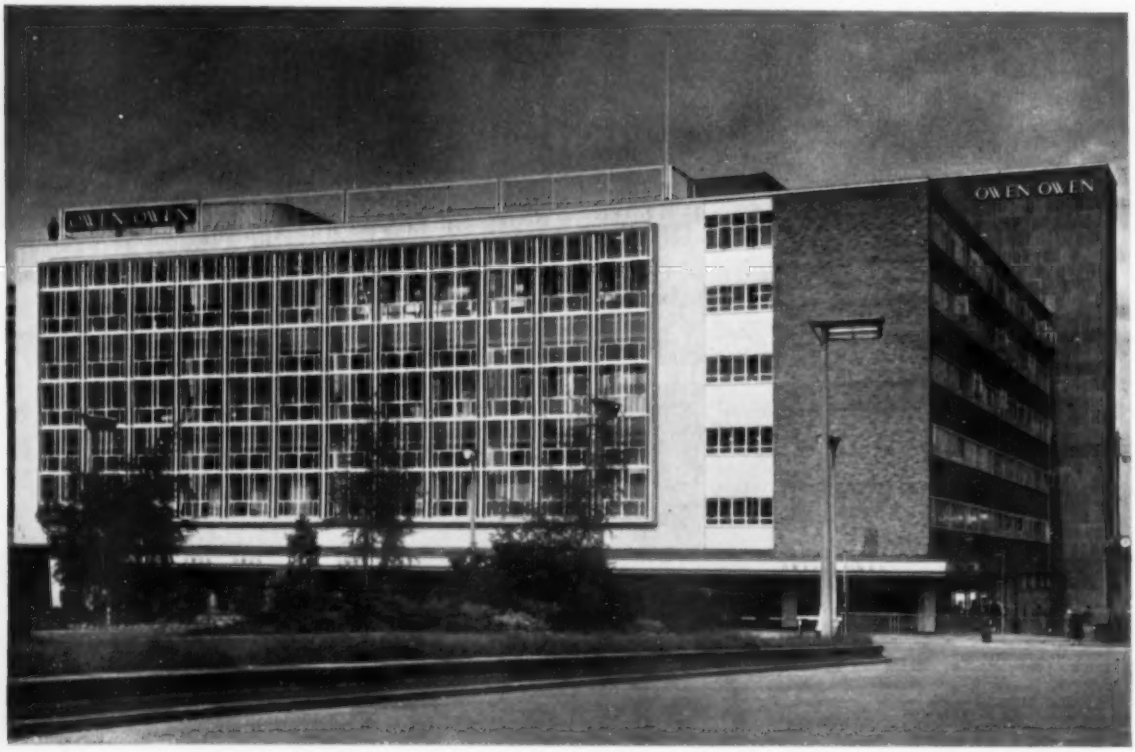
quantity surveyors: Hugh A. Low & Usherwood. *General Contractors:* Bovis Ltd.

Asphalt Tanking: Permanite Ltd. *Cement Glaze:* Robb's Cement Enamel Finishes Ltd. *Construction of Basement:* The Trussed Concrete Steel Co. Ltd. *Conveyor Waste Paper Chute:* Sovex Ltd. *Dexion Shelving:* Dexion Ltd. *Electrical Installation:* Lee Beesley & Co. Ltd. *False Ceilings:* Peters Contractors Ltd. *Fixing of Slabs, etc.:* Anselm Odling & Sons Ltd. *Flooring:* Korkoid Decorative Floors. *French Polishing:* F. R. Rodaway. *Glazing:* Glass (Coventry) Ltd. *Grano Topped Concrete Flooring:* Stuarts Grano. Paving Co. Ltd. *Granolithic Paving:* George Nichols Ltd. *Handrailing and Balustrading:* Culford Art Metal Co. *Heating, Hot Water and Ventilation:* Norris Warming Co. Ltd. *Insulation Work:* Refrigeration (Birmingham) Ltd. *Lifts:* Etchells, Congdon & Muir Ltd. *Lighting Protection:* W. J. Furse & Co. Ltd. *Passenger and Goods Lifts: Kitchen Equipment:* J. & E. Hall Ltd. *Plant for lifting sewage:* Burn Bros. (London) Ltd. *Plastering:* W. A. Telling Ltd., Southern Counties Plastering Ltd. *Plastering to False Ceilings:* Tome & Sons Ltd. *Pneumatic Despatch Tube:* Lamson Engineering Co. Ltd. *Prodorglaze:* Prodorite Ltd. *Shopfront Installation:* George Parnall & Co. Ltd. *Sprinkler Protection:* Atlas Sprinkler Co. Ltd. *Steel Bracketing Hangers:* Campbell Denis & Co. Ltd. *Steel Framework:* Dawnays Ltd. *Terrazzo:* Roman Mosaic Ltd. *Tiling:* Marley Tile Co. Ltd. *Wall Tiling:* Summers & Co. *Water Softening Plant:* The Permutit Co. Ltd. *Waterproofing Basement:* William Briggs & Sons Ltd. *Windows, Steel:* John Gibbs Ltd.

Two progress photographs; on the left, shows the structure which supports the fully glazed wall; on the right, an escalator.

Owen Owen Store

The main elevation on Broadgate faces South. The Trinity Street elevation on the right contains the mezzanine fenestration.



Building Technique, 1854-1954

By GEOFFREY WOOD (OVE ARUP & PARTNERS)

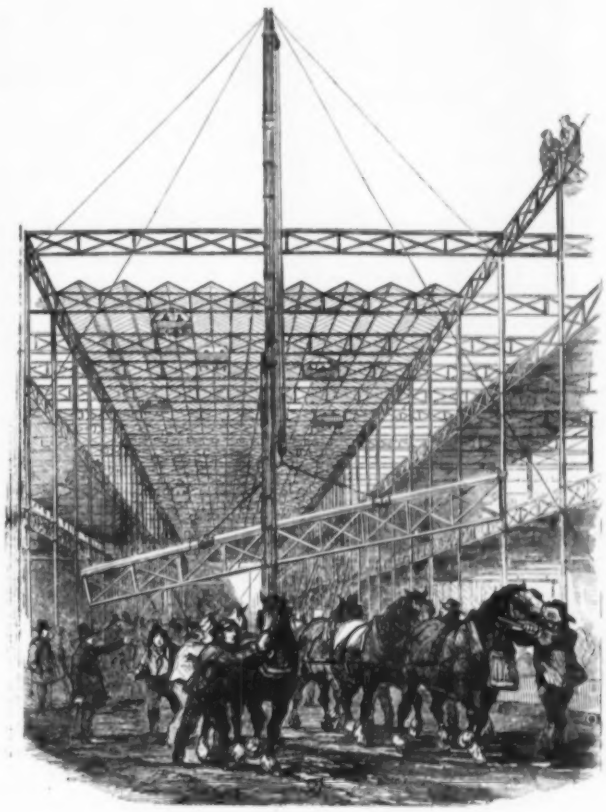
IN 1854 it took as long to cross from London to Paris as it now takes to fly the Atlantic. Progress in building has been equally dramatic. Indeed developments in structure over the past century cannot be separated from simultaneous improvements in materials and transport, not for that matter from the general social and economic movements of the period.

The Crystal Palace was completed in 1851 but a survey of the past century would be incomplete without a reference to this fine building which was both the culmination of generations of experience in cast iron and a magnificent introduction to modern architecture. The newly built railways made it possible to bring the great number of standard castings and frames from the industrial areas so that they could be assembled in the short space of six months. The new forms of transport also enabled countries from all over the world to send their products for exhibition. Nothing could be more appropriate in an age of architectural styles than the housing of this first international exhibition in the first great building in the "international" style.

Nevertheless, the Crystal Palace saw the beginning of the end of the cast-iron age. After 1856 open hearth and Bessemer steel with reliable and uniform properties became available in ever-increasing quantities. Quite unnoticed, the commercial production of aluminium began in 1855.

Steel is the most wonderful of all materials. Its great strength in tension and compression is matched by a high modulus of elasticity, high fatigue strength and high melting point. No other material possesses all these properties in such generous measure. The railways not only made transport of heavy steel cheap and easy, they also created demands for its use in some of the finest and most daring structures of all times. Great stations like St. Pancras sprang up, enclosing the whole area with one single span. Bridges of extraordinary appearance carried the trains over enormous spans.

The highest achievement of this early steel age was the Forth Bridge, completed in 1889. Its two spans are each 1,710 feet, a distance which was not greatly exceeded until the construction of the recent American suspension bridges. It was built plate by plate, member by member. Cheap and abundant skilled labour from the Clyde shipyards permitted a refinement of design quite impossible with modern standard rolled sections. The great cantilevers taper in both horizontal and vertical planes. The compression members are tubes—the perfect section for struts.



It was the supreme hand-made job and it is therefore ironical that William Morris should angrily say that "there never would be an architecture in iron, every improvement being uglier and uglier until they reach the supremest specimen of all ugliness—the Forth Bridge."

Nevertheless he was probably expressing the general bewilderment at the structures made possible by this material of such inhuman strength. Older materials were all of a similar strength to human bones and muscles and the scale of buildings was therefore related to the human frame.

The early steel structures were straightforward solutions to new but simple planning problems. They were usually the work of engineers whose fresh, uninhibited designs in steel often contrasted oddly with stone piers and abutments in the fashionable Gothic style. The impact of steel on the design of more orthodox buildings, however, posed a far more difficult problem to the architect. Inevitably, the steel frame led to the skyscraper. Early developments took place in Chicago and for the first ten years from 1884 to 1894 the tall new monsters showed the same vigour and grasp of the new materials as the bridges and halls of the same period. Subsequent designs, however, lost in freshness as they gained in height.

The Rockefeller Centre in New York, built in 1931-39 is the largest and most interesting of the modern skyscrapers. On a 12-acre plot there are 14 buildings, the

ROCKEFELLER CENTRE

highest of which climbs to 850ft on 70 storeys. There are 2,400 permanent employees who serve the needs of the 26,000 working in the Centre and the 125,000 who come each day on business or pleasure. At any time of the day, this self-contained "town" has more inhabitants than any of our New Towns will have; and America has a surplus of agricultural land!

The skyscraper is undoubtedly the most important architectural contribution of the steel age to modern civilization. It was made possible by a new means of transport—the electric lift. It has also created gigantic problems of surface transport by concentrating such a large population on a tiny piece of land. The skyscraper can solve the problem of living in cities or it can make life in cities intolerable. We can either build order or chaos. The materials required are the same for both.

While all these spectacular developments were taking place, another new material was quietly evolving on entirely different lines. Reinforced concrete made its first appearance at the end of the nineteenth century. In strong contrast to steel, which is essentially a standardized, prefabricated material, reinforced concrete is unique among the more common structural materials in being moulded on the site to any desired shape. Many of the early structures were copies of steelframes, but the Swiss engineer Maillart appreciated its essentially moulded nature and designed some of the most beautiful bridges ever likely to be seen, starting as early as 1905 with the Tavanasa bridge. Another engineer, Freyssinet, of France, designed the Orly aircraft hangar spanning 377ft with ribs of thin reinforced concrete walls cast into huge corrugations. He also designed the Elorn-Plougastel bridge with spans of 600ft whose most interesting feature was the use of hydraulic jacks at the crown for injecting loads into the arch ribs to bring about a more favourable distribution of stresses. This was the first major use of prestressing. The subsequent developments of prestressed concrete have used the stretching of high tensile steel wires to produce similar results and this new material of immense strength is already finding its place in architecture.

If the curved shapes of concrete excited the imaginations of the architects, they taxed the brains of the engineers and mathematicians. The precise calculation of these two- and three-dimensional structures was quite beyond the capacity of designers and in many cases was outside the scope of known methods of mathematical analysis. Resort was made to large-scale tests and the design of mushroom floors is still largely based on early American results. The use of visually simple but mathematically complicated shapes which are the natural forms of reinforced concrete could not wait indefinitely on experiment. The evolution of new methods of calculating the stresses in these structures, in which R. S. Jenkins has played a notable part, is one of the most valuable contributions to structural engineering.

And so we arrive at the present day. We have a wealth of wonderful materials from which to choose (though they seem to take it in turns to be unobtainable). The railway stations and exhibition halls of the early part of our 100 years are succeeded by the glass-clad factories and aeroplane hangars. The Golden Gate suspension bridge of 4,400ft takes pride of place from the Forth Bridge. Steel and reinforced concrete as well as timber are not only firmly established but are each developing on new lines. Welded steel, prestressed concrete and laminated timber are all evolving their own idioms. Aluminium alloys, whose great strength combined with light weight have solved most of the structural problems of aircraft are slowly creeping into building. Experiments are proceeding with the practically incorrodible titanium alloys which rival steel in strength. Fibreglass reinforced plastics, and an ever-increasing number of synthetic materials offer a bewildering choice to an architect whose great grandfather had only to master the problems of bricks, stone and timber. We can certainly face the future well equipped with materials.

The years since the war have produced a heartening number of buildings in which the work of both architect

DUBLIN BUS STATION

and engineer are happily blended. The most significant development of the past 100 years is the steady integration of architecture with civil engineering. These two great professions overlap far too much to remain for ever separated. The civil engineer can no more succeed without an appreciation of æsthetic and human problems than the architect can solve these two problems without a clear understanding of the underlying engineering techniques. The control of the Tennessee River was a fine example of civil engineering which enabled an outstanding plan of human development to be realized. The Rockefeller Centre, which is essentially an architectural achievement of great magnitude, depends on civil engineering—structure, lifts, public services and transport.

These two professions must work side by side in "technical matrimony," and the success of building in the next century will depend upon the degree of harmony which they can achieve.

And what does the future hold in store? Perhaps the man with the helicopter strapped to his back can give us some clues. Instead of agitating for underground garages perhaps we should be planning for helicopter space. Helicopter services are already flying up the Thames. The Rolls-Royce experimental "flying bedstead" may be the forerunner of the vertical take-off supersonic aircraft. The irrigation of deserts and the exploitation of the resources of the oceans can provide vast new supplies of food. Nuclear and solar energy can provide the power, and therefore the wealth, to exploit these possibilities. Coal can become our most valuable source of useful chemicals and materials. Cities can at last lose their filthy smog mantles and become clean. Glass in a variety of colours and textures can be used in abundance. So what sort of city will our helicopterist live in?

By 2054 the vast sprawl of London has been concentrated (by suitable democratic legislation) into a few widely spaced groups of skyscrapers. These vast towers were each built in a few months with steel and aluminium frames, floors prefabricated in large units of a variety of materials, and huge wall-panels of double plate-glass framed into titanium glazing bars. All these units were flown direct from their respective factories and dropped straight into position from the hovering helilorries. Woe betide the architect who changes his plans in mid-air!

Helibuses call at the huge balconies and bridges which connect the blocks of flats at every tenth floor, and transport the passengers to their offices in one of the seven great skyscrapers which form the city. Helicopterists step off their private retractable balconies and fly in the radar-controlled air lanes reserved for their use. The men with business in New York take the lift to the roof and climb into the pilotless daily supersonic express which arrives (according to New York clocks) before it leaves London. On Friday evening our helicopterist steps into the family model to spend a week-end in his caravan in the Atlas Mountains.

Last night the family had a party. They descended to the ground and walked through the woods and farmlands of Mayfair and Piccadilly to the late twentieth-century pleasure gardens of glass-age Soho. They wandered through the old streets to an old-fashioned restaurant where they ate strange foods like roast beef and Yorkshire pudding cooked by coal (on special licence). The celebration was two-fold. Their son, who has just completed his schooling, is off to Mars to do his two years' conscription in the occupation forces. Their daughter is about to fly with her husband by the special supersonic flying bedstead de luxe to the fashionable honeymoon resort on Venus.

Is this fantastic nonsense? Nonsense—yes, fantastic—no. With the exception of space travel we could start drawing up plans to-morrow!

The Building Industry a Century Ago

By A. H. ADAMSON, O.B.E., A Past President, London Master Builders Association

SIR,—I am pleased to give you my recollections of the Building Industry when I entered it over 60 years ago and to record what my father told me about conditions 100 years ago.

My great-grandfather paid £10 for his son's apprenticeship of seven years to an Architect in 1812 and he was not paid any wages at all, but the Architect had to provide food, lodging and clothing. The terms of his indentures would startle present-day apprentices. Here are some of the clauses:—

> "The said apprentice his master shall faithfully serve, his secrets keep, his lawful commands everywhere gladly do. He shall not commit fornication nor contract matrimony within the said term. He shall not play at cards, dice, tables or any other unlawful games whereby his said master may have any loss."

THE NEW HEADQUARTERS IN WESTMINSTER BRIDGE ROAD, OF RICHARD COSTAIN LTD., WHICH WAS OPENED LAST WEEK. THE BUILDING WAS DESIGNED BY THE COMPANY'S STAFF, IN COLLABORATION WITH R. N. WAKELIN, F.R.I.B.A., OF MESSRS. CAMPBELL JONES AND SONS, THE CONSULTANT ARCHITECTS.

My father was apprenticed in 1845 as a Mason and his father paid £60 for his apprenticeship. The wages paid were 7s per week for the first year, 9s per week for the second year, 11s per week for the third year, 14s per week for the fourth year and 19s per week for the last year.

I remember when I started work we were paid £100 in a special case for apprenticing one lad as a Carpenter and Joiner so that we could pay him that amount in wages.

I believe we used to work a 53½-hour week, but I do know we started at 6.30 a.m. because I had to be there at that time—good work was done before breakfast.

The craftsmen's rate was 9d and the labourers' rate 6d per hour—a very different proportion to our present rates of 3s 10½d and 3s 5d.

There were no bonus on output schemes in those days, but I do remember we did have piecework, and I have a contract dated January, 1887, with one of our Mason Fixers for fixing the whole of the stonework at St. Albans Church, Teddington, for 6½d per foot cube—we had to do the hoisting which was done by an old grey mare who was stabled on the job—we had no electric hoists.

There was no necessity in those days for "cash in transit" insurance, and I used to take large sums in gold to jobs on Saturdays without any thought of being knocked on the head and robbed. Now we have to send two men to guard the cashier when he comes from the Bank.

We had no "Holidays with Pay" or National Insurance, and did not have to collect taxes for the Government, because Income Tax in 1889 was only 6d in the £.

I think the present tax of 9s in the £ accounts for the lack of enthusiasm for work which has such a deadening influence on employees and employers alike.

In the good old days there were many independent firms from whom to get quotations and supplies, and I still remember the names of the firms supplying Bath and Portland stone before they were gathered together in one organization.

We used to buy barges of stock bricks which were not graded and we could get suitable bricks for foundations as well as excellent facings in any barge—it was my duty to go down to the river (at 6.30 a.m.) to inspect the bricks and arrange the unloading.

There was no "National List Price c/o Building Industry Distributors," and we placed our orders direct with the manufacturers, and thus saved the percentage reserved for Merchants at the present time.

We had no motor lorries or cars and transport depended on horses—my father wearing a top hat was driven to jobs in a nice pony trap—I followed on in the same way, but without a top hat.

Talking of top hats reminds me of a very old photograph showing many of our men outside our Chiswick works wearing top hats.

I was sorry to give up our splendid Suffolk horses for transport—they won many silver medals at the Cart Horse Parades.

There was no smoking on jobs until after the first World War, and it is difficult to check it now as it has spread to offices—a great pity.

I remember a man from the Public House next to our Stone Yard coming in with a large can of beer to serve the masons at the banker—now we have the breaks for tea and it is astonishing the amount of tea drunk by the men. A lady client wrote me a short time ago as follows: "Endless cups of tea are consumed and, while I know that is an occupational disease, it does seem that the pace is a bit too leisurely."

We had no Professional Quantity Surveyors in the old days, but I remember one I met on some Church job who upset me when he sarcastically described my Day Work

PHOTOGRAPH OF MODEL OF THE NEW OFFICE BUILDING FOR MESSRS. WIMPEY & CO. AT THE GROVE, HAMMERSMITH. DESIGNED BY THE FIRM'S OWN ARCHITECTS DEPARTMENT.

sheets as "Fairy tales," and I refused to have anything more to do with him.

Now I have the highest regard for Chartered Quantity Surveyors whom I regard as the backbone of the professional side of the Industry—they have done and are doing excellent work for Architects and Builders.

We now have a great number of extremely useful mechanical tools which carry special rates for the men who use them, and in consequence the present Working Rule Agreement is a most complicated one compared with the simple Agreement we had in the past.

I remember the Masons' strike when I was a boy, and seeing the masons brought over from the Continent with their wooden shoes. We have had strikes since then, but I am glad to say the National Joint Council now deals with our labour troubles in an effort to avoid strikes.

In my early days I had nothing to do with tendering, but I do know that Bills of Quantities gave full details of steelwork and all labours on stonework for builders to price, but now tenders are based on provisional sums (sometimes more than 60 per cent of the total cost) and the builder is left to co-ordinate the sub-contractors and specialists and carry out the excavations, concreting, brickwork and painting only.

I think the rush and hurry at the present time due to shortage of labour, delays in obtaining manufactured goods, and the "couldn't care less" attitude of those whose help is needed are most trying, and it requires a strong sense of duty for an employer to carry on work in these days of restrictions and heavy taxation.

I have served a long apprenticeship to the Building Industry, and although there have been improvements in connection with the conditions of Contracts, agreed Day Work charges, etc., and above all a close co-operation between Architects, Surveyors and Builders, I think there is much to be said for the old times when good labour was available, and there was more freedom, few regulations, less rush and more enjoyment in one's work.

PROPOSED OFFICES AT MILL HILL FOR JOHN LAING & SON LIMITED
ARCHITECTS: ADAMS, HOLDEN & PEARSON

The Building Industry. To-day and To-morrow

By PETER TRENCH, O.B.E., B.Sc., T.D., Managing Director, Bovis, Ltd.

THERE are some who would have us believe that there has been little or no progress in the Building Industry during the past 100 years; there are others who judge an entire industry by the lack of sustained effort of one individual in a hole in the road or by the inadequacy of the carpenter-cum-electrician-cum-plumber who fixes the clothes drier which has come adrift from the kitchen ceiling. It is not difficult to snipe at an industry which embraces all operations from changing washers to building cathedrals, especially when those operations are more often than not carried out under the public gaze.

One has more sympathy with those who nostalgically bemoan the passing of a craft or pine for the rubbed brick arch and the bolection moulding or think back on the days not so long ago of timber at £10 a standard; it is, perhaps, unfortunate, but true, that "things are not what they used to be"—but then they never were and they never will be! No, the industrial glamour of this century has been stolen by the motor car and aircraft industries just as during the last century it was by railways and ship building; yet these are comparative dwarfs beside our own industry, which employs directly nearly 1¼ million men and indirectly probably the same number again; an industry whose annual output is not far short of £2,000 million and which contributes nearly half the annual gross fixed investment of the country. The immensity of these figures is rivalled only by the heterogeneous nature of the contributors, both in size and function, but let not an industry be judged by its smallest or most backward members; the vast bulk of new construction is now carried out by organizations as

different from those of 1854 as are the ships which cross the Atlantic now to those of that period.

Within the space of an article such as this, only certain aspects of that difference can be discussed and it is proposed to concentrate on the four "ations"—Mechanization, Education, Specialization and Co-operation.

Statistics are, unfortunately, not available to show the steadily increasing horse power per operative employed but, if mechanization was tardy in its arrival, there can be no disputing its progress during the last 10 years. This progress has been fostered from all directions: the trend towards standardization and simplification of design which has resulted in considerable off-site prefabrication, the high cost and comparative shortage of on-site labour, the demand for speedy erection, the ingenuity of the manufacturers of machines and the endeavour to solve the problem of horizontal as well as vertical handling. Economics have played a greater part in this matter than many realize. There comes a time with rising labour costs, especially when the difference between the unskilled and skilled craft rate is so small, when it is more expensive to carry out an operation by hand than by machine—platitudinous, perhaps, but true. Mechanization, moreover, has required a change in capital structure within the industry which may well lead to a reduction in the number of building firms and to new methods of plant hire. Mechanization, too, has called for a higher standard of organizational efficiency which naturally leads one to the subject of education.

Apart from normal progress in general education and the gradual raising of the school-leaving age, education within the industry itself has not advanced at the pace required. The system of craft apprenticeship and training has stood the test of time; it is, in general, technical training for supervisors and foremen and training in Management that the industry has lagged behind the others. Although the technical schools and colleges have, in conjunction with the Institute of City and Guilds and other bodies, done stalwart work, new demands have arisen which have, as yet, either not been satisfied or not wholly satisfied. The practicability of merging First Year Building and Architectural training, the desirability of a recognized university degree in building or the setting up of the equivalent of an M.I.T. are matters beyond the scope of this article—suffice it to say that the leaders of the industry are well aware of its educational shortcomings and are taking steps to remedy the position: courses for foremen and courses in Management are now in being and only good can come from them. One thing is certain, the complicated nature of a building operation to-day requires not only technicians but men of considerable administrative skill; modern mechanized techniques of assembly and erection require a highly efficient site organization in the charge of a trained General Foreman whose functions must include not only movement planning of plant and materials but an understanding of man management and the co-ordination and control of all trades. The bowler hat is not being replaced by the mortar-board but the educational requirements of the 1954 General Foreman are very much greater than those of 1854.

It could be logically argued that the great increase of specialists within the industry which has been progressively in evidence since the turn of the century has been brought about by the introduction of new materials and new techniques. Specialization is the order of the day and whether for the elimination of dry rot or the installation of refrigerated air conditioning, the specialists are here to stay. No builder can by himself adequately cope with all operations to-day and it would be folly to try; the need to understand the problems of these specialists is, however, a modern requirement, for their activities must be programmed and co-ordinated with other trades and their costs must be estimated. The modern builder may not have this specialist knowledge but he certainly knows where to get it. It is not easy to discover what facilities for research and technical information were available to the builder of the last century, but we may be sure that the constant flow of information from to-day's Building Research Station and the Ministry of Works would have surprised, if not appalled, him. The constant introduction of new materials and techniques has called for a degree of co-operation between architect, engineer, builder, operative, sub-contractor and manufacturer which has by no means reached its peak. Such co-operation could not have been attained if changes in relationship had not emerged.

The gulf between the professional man and the man of commerce in 1854 was wide indeed—socially and educationally the former was generally superior. If that gulf has narrowed it is not because of any twist of democracy or education, but a reorientation of functions and a new conception of the relationship of design, manufacture and assembly. The modern architect is not only concerned with the æsthetics and design of a building but, in addition, he has to be a technician, lawyer, diplomat, economist, accountant and planner; it so happens that the function of the modern builder also embraces these additional requirements and it is in the overlapping of these functions that the two sides have met. The concept of a building team is a modern one but it has not been launched upon the unsuspecting architectural profession by a set of unscrupulous builders, it is the natural evolution of a complex state of affairs in which no single entity can master the whole; the recognition and respect for each other's function is a *sine qua non* for the success of a modern building operation. The value of assembling the team during the early stages of many projects has led to a re-examination of existing contracting procedure and although competition by price is likely to remain, the trend of competition by performance—speed, efficiency and the technical contribution a builder can offer—is gaining ground.

The change in relationship of the Master Builder to his workmen is also marked; with nation-wide firms and the employment of casual labour, the close relationship of Master and man has disappeared. Apart from the introduction of fresh problems of management, this has resulted in the growth of Trade Unions and Employers' Associations; such changes were inevitable but the need for co-operation is still very real. It has been said that there is no such thing as a bad army—there are only bad officers. This is true but if an army is to be co-ordinated into an efficient fighting machine, its members must be ready to accept and use modern weapons and loyally to follow their leaders; those leaders, however, must be worthy of that loyalty.

If the momentum of progress is to be increased or even maintained, the vital need for all sections of the industry to combine in their efforts is indisputable and only by united effort can we achieve that high status which, by reason of size, economic importance and contribution to the national well-being, is deservedly ours.

Shops and Stores, 1854-1954

By ELLIS SOMAKE, F.R.I.B.A., STAFF ARCHITECT, DOLCIS SHOE CO.

VARIED ways of living, trading and travelling in each age have resulted in different solutions being found for the design of shops and stores. Thus the shops of each age have always reflected the way of life of that period.

One hundred years ago many of our well-known shopping streets of to-day existed, and the streets of 1854 contained Georgian shops mingled with those of the Victorian and New Industrial age. Among the architects of that day who had specialized in shop design were Nash, who completed Regent Street in 1826; Samuel Ware, who designed the Burlington Arcade in 1830; and George Maddox, who was probably responsible for Messrs. Savory & Moore's shop in Bond Street.

In Georgian times most trade had depended upon personal contact between buyer and seller—the latter with a small business based on home manufacturing and home retailing. There were no wholesalers to supply their merchandise, no national advertising to boost the sales of their goods. The shop fronts were carefully proportioned, the scale of the window was exactly right in relation to the building, the street and height of the customer. Although shop windows conformed to these rules, this did not prevent great variety in design. Individuality gave them half their charm. The windows were curved or straight and divided into rectangles by glazing bars or given a Gothic flavour by pointing upper lights; doors were solid or partly glazed, limitless variations being introduced by detail of pilaster or fanlight. Colourful symbols, such as the Barber's pole, the Vintner's bunch of grapes, the Chemist's pestle and mortar, and the Banker's grasshopper attracted the attention of the passer-by and identified the type of trade carried out. The shop opened directly on to a parlour where the tradesman was able to combine the supervision of home and business and yet had only to step out to greet and serve his customers. Interiors and fittings were beginning to gain an elegance probably due to the influence of such designers as Sheraton and Robert Adam.

By 1854 the rise of industrialization and the enormous increase of population in the towns had imposed a new set of conditions on tradesmen. With an expanding range of goods and tastes, increased competition caused an urge for improvement in shopkeeping. The Great Exhibition of 1851 organized so successfully by the Prince Consort, stimulated the transition from handcraftmanship to mass-production. The Crystal Palace, setting for this Great Exhibition, was made almost entirely of metal and glass, and gave an indication of the new trends in shop design. Plate glass was first made in 1830, and experiments had been made with cast iron since the beginning of the century. Shopkeepers modernized their shopfronts by ripping out glazing bars and mouldings no longer fashionable, and substituting large rectangles of plate glass, thus satisfying their need for more and more display space for the goods pouring out of Birmingham and Manchester. The ground floors and front gardens of existing houses

"SHOPKEEPERS MODERNIZED THEIR SHOP FRONTS BY RIPPING OUT GLAZING BARS" (FROM ILLUSTRATED CATALOGUE OF THE GREAT EXHIBITION OF 1851)

NEW OWEN OWEN STORE, COVENTRY

were converted into shops and important pioneer work into the use of cast iron was carried out. The manuals of the day were full of instructions for supporting upper storeys on iron girders and columns. The need for visible structure was eliminated and the entire ground floor became usable shop space. This was a forerunner of the use of steel as the skeleton structure of contemporary department stores.

At first the Architects used these new materials and building techniques in conjunction with whichever of the Gothic or Classical styles they happened to favour. The shop's name appeared on elaborate fascias forming part of an order and terminating in consoles as well as brass stallboards at the foot of the window. The interiors attempted to retain the elegance of the Georgian shops but were cluttered with the ornate detail so typical of the exhibits of the Great Exhibition that William Morris had found so vulgar. Mercers and haberdashers were well fitted with mahogany counters and fixtures, brass and china light

SHOP IN GEORGE STREET, CANTERBURY
ARCHITECT: ROBERT PAINE

fittings, mirrors and cheval glasses. Stock was nearly always exposed and contributed largely to the atmosphere of the interiors. In 1915 Heal and Sons, in Tottenham Court Road, was built showing a more restrained change of style, and 1934 saw Peter Jones, in Sloane Square, as a pioneer in the use of structural steel and contemporary shop design.

The development of rail and road traffic enabled manufacturers to distribute on a national scale. This led to new ways and means of retailing. Small shops were seriously threatened by the greater buying and sales power of the big stores and in self-defence they also turned to diversified sales; men's clothing stores added shoes and hats, the druggists bathing caps and even libraries. Later they linked together under common management and the multiple or chain store was born. By the last half of the nineteenth century the influence of France and America was shown in the development of the department stores, and already such chain stores were beginning to be represented in many towns.

The more personal and exclusive service of the little shop did much to worry the department store which, in retaliation, installed lounges, restaurants, travel and enquiry bureaux, etc. The race for big shopping business was on, and both big stores and small had begun to realize that having the right merchandise at the right price was not enough to capture trade; the comfort and entertainment of the customer became equally important. New building materials assisted towards this end and in particular the design of shop fronts was greatly affected by modern methods of manufacturing. The availability of large sheets of plate glass, armour plate entrance doors and metals like aluminium, bronze and stainless steel made possible a new concept of design.

The experience gained over the last 100 years has resulted in the stores of to-day which reflect the integration of form and function for new ways of trading with new methods of building. Perhaps the greatest change is the opening up of the store front and the uniting of the interior with the exterior, thus disproving the old theory that a shop front was one thing and the store inside it another. Everyone now realizes that the entrance, the sales area and all the hidden service elements of a store have to work together to work at all. The success of shops built in this manner has been measured by the takings.

Thus, an architect of to-day attempts to design a shop front which first of all should be inviting, since it must act as a salesman who, silently but none the less firmly and persuasively, by exposing the passer-by to the calculating appeals of the window displays, induces him to enter the shop and buy. And when one realizes that it takes the average passer-by just six seconds to pass the average shop front, it will be seen that the invitation to enter must be strong if the passer-by is to be transformed into a prospective customer.

Apart from the inviting aspect, shopfronts of to-day must also possess qualities of attraction, atmosphere and appraisal. In order to possess these attributes it will be seen that a successful shop must be an individual frank design of its own specific operation rather than an adaptation of some other store. It must show the goods on display looking better and more desirable than they would in any other setting; it must use a selection of materials and a colour scheme designed to exert a forceful impression on customers' reactions; it must use tailor-made lighting schemes designed for one purpose and one purpose only—to enhance and glamorize the goods and make them more desirable. Another important factor which can go a long way towards the success or otherwise of a contemporary store is its colour scheme. It has been scientifically proved that what a person does in a given situation can be strongly affected by surrounding colours.

All the above points intelligently used in proper balance go a long way towards producing the well-designed contemporary store of to-day; the store which suits present-day habits and makes shopping the pleasure it should be. Many shops designed on these lines have appeared since the Second World War, but one cannot say that they are as yet popular since only a handful of shop-owners have been willing to allow their Architects to experiment whilst the bulk have been content to accept the more conservative designs which any good shopfitting firm can so ably produce.

There is a chance ahead for us to rebuild our shopping streets, to build new shopping centres planned for contemporary living, to give the department store a more appropriate physical expression and finally to restate the old problem of the small retail shop in fresh and interesting terms.

Now what of the future? Perhaps transportation will play the biggest part, in fact the increasing popularity of the motor car resulting in difficulties of parking is doing more towards changing our shopping habits than any other single factor. Also, incomes are levelling out thus giving greater spending opportunities to more people than ever before. It appears certain therefore, that the suburban neighbourhood shopping centres will develop far more than the principal thoroughfares of the Metropolis. As is already practised in the United States of America, shops of the future will either be grouped around vast parking areas or will be on pedestrian ways closely adjoining convenient parking places. As factories offer greater opportunities to workers, fewer people will be attracted to being employed as shop assistants and the self-help store will probably set the pattern for all classes of merchandise.

But all this is as uncertain as anything else in this world, and no doubt the *Architect & Building News* of 2054 will be able to furnish a far more accurate description.

(Research by Janet Keable)

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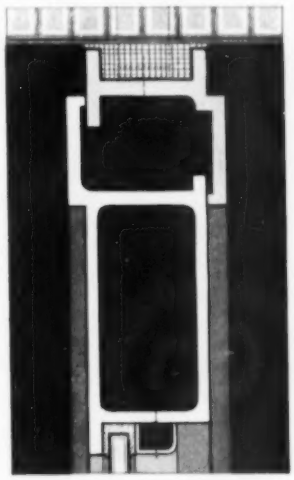

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Building Law: A Century of Change

By F. H. B. LAYFIELD

IN the light of an early dawn on October 25, 1854, the British redoubts on Causeway Heights began firing on approaching Russian troops; the Battle of Balaclava had started. By nightfall the loss of life was appalling: the Light Brigade alone, which had started its epic charge with 700 horsemen, now had 195. And the casualties of that day, of Alma, of Inkerman, paled against the ravages of winter before Sebastapol. But war was not the only nor even the chief killer in those far-off days, nor soldiers the only victims. Even as the Army set out for Crimea in the late summer of 1854 the Secretary of the recently formed Poor Law Board was writing

Poor Law Board
Whitehall.
21st August, 1854

"Sir,

In consequence of the recurrence of the disease of cholera in a more or less alarming form in many parts of the country, the Poor Law Board are anxious to recall to the recollections of Boards of Guardians the recommendations given to them on previous visitations of this formidable epidemic. . . ."

In those final words lay the key to much that has happened since for the epidemic of cholera, which in that year was carrying off more victims than arms and military inefficiency, was in no way novel. The absence of sanitary control which had characterized the rural past had been continued during the Industrial Revolution with appalling results. In 1832, the year of the Reform Bill, cholera had swept the country. Epidemics of typhus in 1837 and in 1843 had added to the toll. Conditions in the streets of our towns, in which so great a proportion of English people were even then living, at last began to attract attention. The appalling conditions revealed by the Report of the Health of Towns Commission began to demand a remedy. London at that time was expanding at the rate of 2,000 houses a year, and its own Medical Officer described its subsoil as "17 million cubic feet of decaying residium." Grim as the conditions of the poor were, a complete lack of sanitary arrangements extended even to the palace. The Royal apartments at Buckingham Palace were ventilated through the common sewer. For many years, for decades, nothing was done, but while the self-interest of slum landlords were the principal contributors to the condition of the towns there were many other factors which combined to render action tardy and difficult. "A certain native spirit of muddle," as it has been called, a lack of understanding of the causes and cures of the prevailing problems, all combined to maintain inertia. Most important of all everywhere, except in a few boroughs, an antiquated parish organization, which had remained largely unchanged since the days of Elizabeth, rendered almost all action abortive. It was against these obstacles that half a century of struggle to establish good building and sanitation was to be waged.

The first signs of action were the efforts of some enlightened municipalities to secure local Acts which would give them powers to control, in some measure, the sanitary condition of their towns. Prominent among these was Liverpool, which in 1846 secured the Liverpool Sanitary Act, under which they appointed the first recognized Medical Officer of Health. So various were these Acts that some effort began to be made to consolidate them in such statutes as the Town Improvement Clauses Act of 1847 in order to cheapen and simplify local legislation. But no general effort was made to remedy the condition of the towns until serious epidemics threatened the well-to-do. In 1848 cholera once again ravaged the country, and this time the tide of alarm carried the work of the Health of Towns Commission to its first real fruits. After several abortive attempts to secure its passage in previous years the Government succeeded in placing the first Public Health Act on the Statute Book.

It is from this Act that any serious attempt to improve urban conditions must date. The modernity of its ideas can be seen in its provisions. Section 53, for example, provided:

> "And be it enacted, that, Fourteen Days at the least before beginning to dig or lay out the Foundations of or for any new House, or to rebuild any House pulled down to the Extent aforesaid, the Person intending so to build or re-build shall give to the Local Board of Health written Notice thereof, together with the Level or intended Level of the cellars or lowest Floor, and the Situation and Construction of the Privies and Cesspools to be built, constructed, or used in connexion with such House; and it shall not be lawful to build or rebuild any such House or to build or construct any such Privy or Cesspool, until the Particulars so required to be stated have been approved by the said Local Board."

While the erection of new houses were thus to be subject to approval by the Local Board of Health, the construction of streets was not forgotten. Section 72 provided:

> "And be it enacted, that one Month at the least before any Street is newly laid out as aforesaid written Notice shall be given to the Local Board of Health showing the intended Level and Width thereof; and the Level and Width of every such Street shall be fixed by the Local Board, and it shall not be lawful to lay out, make or build upon any such Street otherwise than in accordance with the Level and Width so fixed, unless, upon the Disapproval by the said Local Board of the Level or Width specified in such a Notice, the General Board of Health shall otherwise direct."

Commenting on the opposition to the Bill, *The Times* of the day remarked: "If this Bill will not do, what will? . . . Unless objectors are prepared with some positive measures of their own, we really think they had better hold their peace and have done with it." The Opposition had no such measures of their own. Nevertheless, though the 1848 Act marks the beginning of a serious attempt to control buildings and streets, there was much that was wrong with it and it has never really fulfilled its promise. Two main defects soon became apparent.

While the Local Board could exercise something like byelaw control, it was a discretionary *ad hoc* control with all the attendant disadvantages of such a method. Byelaws, as we recognize them, were not as yet. There was a much more serious difficulty in the way of enforcing control under the Act, and it was the solution of this difficulty which robbed all other improvements of their full force until it was solved. At the time of the Bill there was much opposition to the establishment of the General Board of Health. *The Times* defended the Board by say-

ing, aptly: "A town of manufacturers and speculators is apt to leave the poor to shift for themselves, to stew in cellars and garrets, nor are landlords and farmers apt to care much for cottages . . . Something of a central authority is necessary to wrestle with the selfishness of wealth." But the real problem was not centralization, or no, but the proper form that central authority should take. The General Board of Health, free as it was from Ministerial responsibility, was not acceptable. Nor was it even really effective, for though the Board had authority to force the hand of a reluctant local board, it could not compel the latter to take effective action. The Board, furthermore, had no powers of inspection or superintendance. If the Local Board chose to neglect its duties under the Act the Board could do nothing effective.

1854 was the really decisive year, for the 1848 powers were due to expire in that year. The Government accordingly brought in a Bill to continue many of the powers of the Act, but at the same time they instituted a form of central control which was to prove the beginning of effective action. The General Board went, and in its place was established a Board composed of Ministers destined to last in one form or another until the advent of a Ministry of Health after the First World War.

But if 1854 saw the beginnings of effective and realistic central machinery to supervise new building and new streets, two further ingredients to effective and sensible control were lacking. One of these was the lack of adequate local machinery; this was not to be rectified in full for many years. More pressing was the need to replace *ad hoc* discretionary powers of Local Boards with a better system. This new system, introduced four years later in 1858, was the power to make byelaws. The Local Government Act of that year not only brought the word byelaw into general use but established the right of Local Boards to make such general rules for a variety of purposes. While it did not give power to make byelaws generally, only on specified matters, these subjects embraced all those included in the 1848 dispensation as well as significant additions. Now for the first time it was possible to regulate the space about buildings, the structure of walls to secure stability and fire prevention; and to secure the closing of buildings or parts of buildings which were judged "Unfit for Human Habitation." In these and similar powers of a hundred years ago the real shape of modern byelaw control can be clearly discerned. Despite the many difficulties, by 1858 much had been achieved, the Public Health Act though not compulsory had already been adopted in 200 places, including many industrial towns, and widespread action was commencing in many of the great cities.

The century which has followed has witnessed very little change in the *ideas* and *objects* which such men as Chadwick were urging upon the Government a hundred years ago, but rather has seen a long struggle to bring those ideas into effective form. Perhaps the most decisive stage came in the seventies and eighties when the establishment of a co-ordinated and elective system of Local Government brought effective action on a large scale. At the same time the great Public Health Act of 1875 widened and consolidated the power to make building byelaws. The "confirming" authority now began to show new initiative, for very shortly afterwards came the first "Model" byelaws. These were prepared by the Local Government Board and owed much to the assistance and inspiration of the R.I.B.A. It was only then, in the seventies, that the death rate began to fall decisively as the result of the long years of sanitary and building reforms. Once again custom was proving the warrant of law; byelaws were now a recognized part of the administration.

By a not unusual irony, just as the idea and practice of building byelaws was at last bringing about a real revolution in the condition of towns, were their limitations as well as their advantages perceived. In the years which followed the full flowering of the Victorian building byelaw the sanitary battle was virtually won, but it left much in its wake that was unwelcome. This method of control did not deal adequately with the fearful backlog of bad building. When successful in supervising contemporary building it produced a result which was as forbidding as it was dreary. Monotony was the watchword. From the seventies and eighties and the realization of the deficiencies of the byelaw system there begins a new stage in their development.

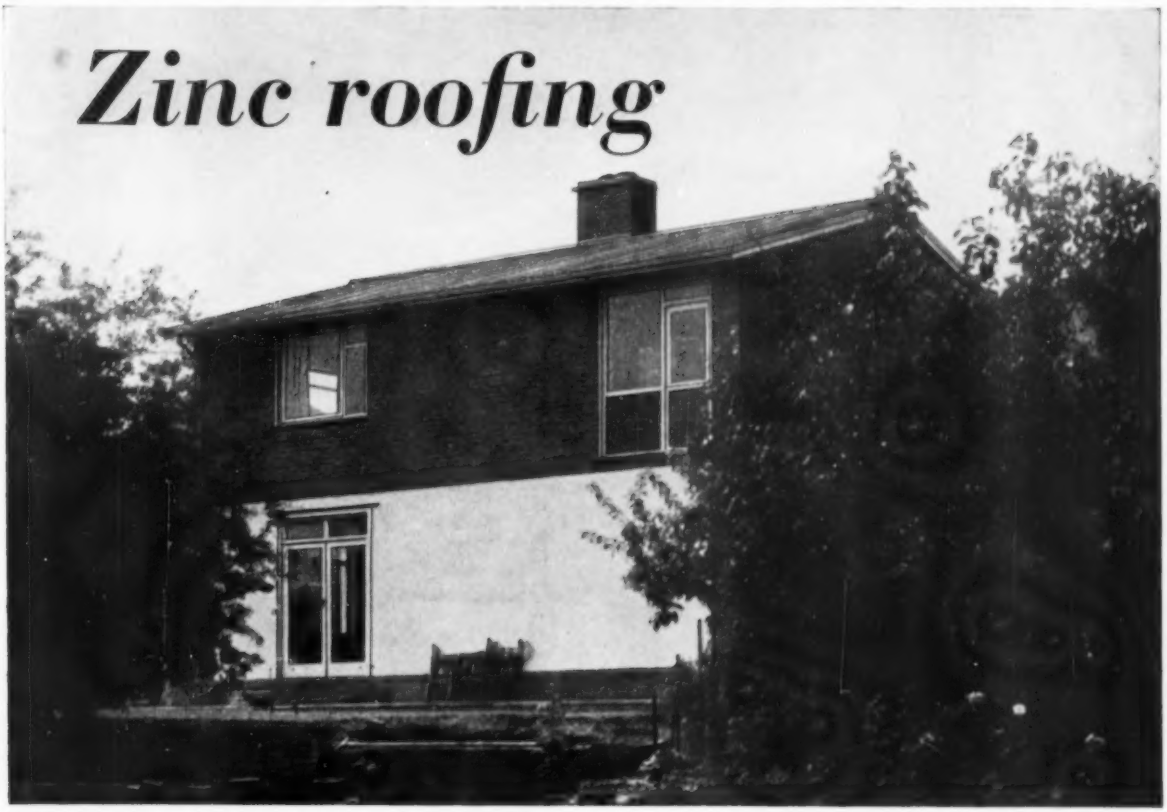
The awakening interest in wider issues than those on which the byelaw was based stimulated a separation of the legislative stream. Public Health legislation which since 1848 had been the basis for the control of building now begins to separate into three separate courses. Housing appears first to take over and to elaborate the control and management of larger units than merely a street, and to embark upon the difficult task of clearing away all those buildings which had escaped the full operation of byelaws; a task unhappily by no means complete in our own day. Town Planning next appears and takes over the task of embodying other elements than houses and streets, and concerns itself with wider questions of environment.

In the nineteenth century, building byelaws had a negative rôle; they were part of a process of prevention whose object was to stop men building houses and streets which were a danger to public health. To-day, some hundred years after their precursors of 1848 and 1858, they are taking on a new aspect. While restraint is still necessary sanitary buildings are now the order of the day and many public bodies are watchful and would soon prevent any serious breach of accepted sanitary conventions. Byelaws are now coming much more to be recognized as instruments for securing enhanced performance and for promoting increased efficiency in a positive way in the interests of safety and health. Much valuable work in such matters has been done in recent years by the British Standards Institution and full advantage has been taken of this by the new model byelaws prepared by the Ministry of Housing and Local Government and issued in 1952 and 1953. These models will, it is hoped, be a considerable step towards uniformity of application and content. Perhaps the most important contribution is the impetus they give to less rigid interpretation, a reflection of the changing rôle of the byelaw from a purely negative function towards a more positive instrument. The "deemed to satisfy" clauses should afford much-needed encouragement to the adoption and development of new building techniques.

But despite the progress that has been made in the changing function of the byelaw there is still even more to do. The present main defects are vestigial; they are

[Continued on page 509

Zinc roofing



Architects: Messrs. Challen & Floyd, A/ARIBA.

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Flashing round chimney stack.

Detail of verge apron.

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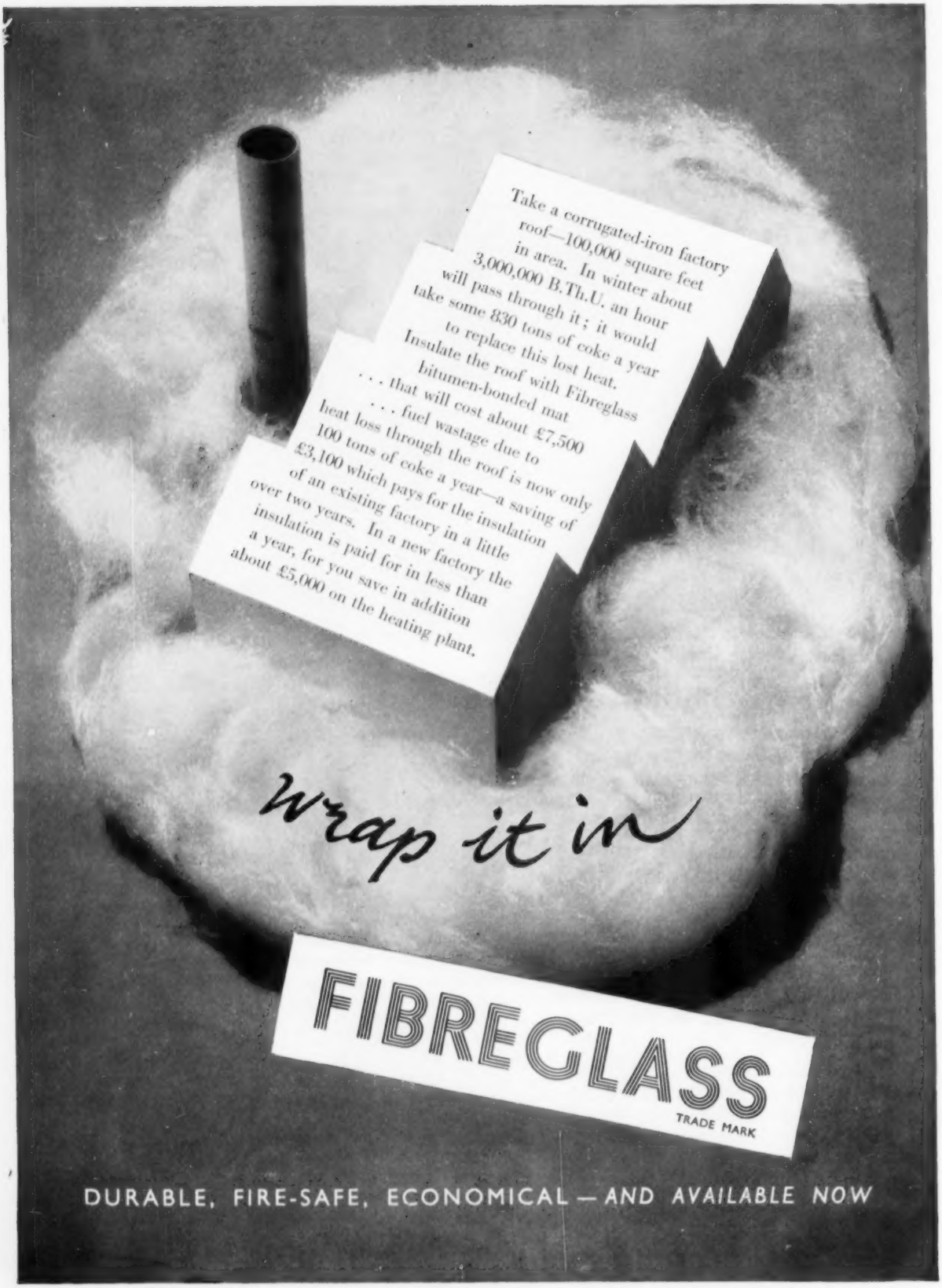
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relics of the function and growth of byelaw control in the years after 1858. First comes the need for economy in techniques and materials which byelaws would and should do much to stimulate. Next comes the need for economy in administration. It is here, perhaps, that the need for reform and improvement is most obvious and most urgent. There is a widespread and well-founded belief that there is still a great deal of needless confusion involving unnecessary waste of time and money. In this article, attention has been concentrated on the main statutes involved in the chain of Public Health Acts (culminating in that of 1936), but the number of other local and public general Acts which now affect the control of building are legion. Many of the recommendations made on this subject by a Departmental Committee in 1918 remain valid to-day, while in some respects the position has grown a great deal worse. Finally, contemporary byelaws still exercise a cramping effect on design. In the rebuilding of our cities and towns no less than in the countryside every encouragement should be afforded to improve the appearance of our buildings. Byelaws should be so modelled as to encourage attractive and imaginative building. Byelaws which banished the evils of yesterday should not be allowed to create those of to-morrow.

A century of achievement has now passed in which there is much that is good. But the age for which the byelaw was designed is now gone and a new age is with us. Now is surely the moment to consider carefully whether the byelaw cannot be regenerated to meet the new conditions. The departmental enquiry of 1918 did much to improve matters, but a lot remains to be attempted and reforms are needed. An enquiry on these lines has already begun in Scotland. Should we be far behind.

CENTRAL BUILDINGS, SOUTHWARK STREET, BUILT IN 1866, ARCHITECT, R. H. MOORE, ORIGINALLY THE HOP AND MALT EXCHANGE.

The Dwelling During the Last 100 Years

THE mid-nineteenth century was a settled period, socially and economically, the scarcely discernible hints of the future at that time threw only long shadows of the things to come. Thoroughly established thought in architecture was, paradoxically, chaotic. It is fairly typically illustrated by "The Logs" of 1867 (a little late in date, perhaps, but a convenient illustration). On the other hand, the hint, the long shadow, was thrown by the simple planning and uncomplicated domestic appearance of Philip Webb's "Red House" of 1859.

In the twentieth century the prophetic shadows have been shorter, artistic as well as material invention having been artificially stimulated by the two world wars. Consequently, changes in social habit, hurried by revolutionary economics, have been abrupt. The sophisticated, indeed, are only too anxious to exploit, not only material advances, but novel living as well and this desire is well exemplified in the excellently considered *dernier cri* design of 57, Ham Street. The unsophisticated, alternatively, if they live in London and are dependent upon the welfare state for their living accommodation, must accept what is given them: whether it be "parlour and passage" or "interpenetration of space"!

In 1854 no house existed which would satisfy modern sanitary standards; there was only one Public Health Act, that of 1848, which hardly touched the problems before it. But by the turn of the century, Housing and Health Acts had, largely because of public agitation, become numerous and had cut at the root of existing malpractices, firmly saddling local government with the onus of cleaning up the black spots and making sure that new work conformed with decent standards. No control existed in the 1850s to ease the relationship of house to house, or of group to neighbourhood. The great landowners were on the way out as estate developers and the interim phase before the coming of the Planning Acts, the phase of speculative development (with none but financial vision) was on the way in. Only rare and enlightened instances, exemplified by such schemes as Port Sunlight, Bournville, Bedford Park and the "garden" townships, prophesied during the succeeding decades the coming of the great estates of large housing authorities and the New Town Corporations. This is the only patronage which can now afford to give an enlightened architectural lead, but even this is in many cases becoming bogged down by well-meaning devices aimed at a democratic measure of control. With regard to the individual, fewer than ever can afford to build their own houses to their own peculiar

THE "LOGS" AS ORIGINALLY DESIGNED BY J. S. NIGHTINGALE

needs, yet more people than ever can afford to live to a standard undreamed of by anyone one hundred years ago. This is the result of scientific advance and a more equable distribution of wealth, which has brought its own peculiar problems to our many-faceted society.

These changed factors and conditions are reflected to a remarkable degree in the houses of to-day. Generally speaking, the changes are these: in private houses, drastic contraction; in State-aided houses, some expansion; with regard to flats, a completely new architectural problem has been posed, a problem which, architecturally speaking, was not faced until the implication of Queen Anne's Mansions had been thoroughly digested.

The change exemplified by a comparison of "The Logs" and 57, Ham Street, is indeed startling. It is apt and perhaps pardonable to compare the two people for whom these highly individual houses were made to measure, in the sense that one was, and the other is, a professional man with family responsibilities and the need for specialized space for feeding, cooking, sleeping and recreation. In "The Logs" is found a separate cell, well insulated from all other domestic activities, for each of these needs. The dawning of a sanitary conscience is apparent (the owner happened to be a sanitary engineer) in these ample but segregated spaces; all the bedrooms which are not provided with a bathroom *en suite* have a fitted wash-basin; even the servants' two bedrooms are adjoined by a bathroom: window openings are large and fitted with double-hung sashes, glazed with sheet or plate glass unobstructed by sash bars. This kind of house was an entity, unrelated to its surroundings. Seldom were any

[Continued on page 511

"THE LOGS" REPLANNED IN 1950 AS SIX MAISONNETTES BY ALEXANDER GIBSON F.R.I.B.A.

"The Logs" was built at a cost of £9,000 for a Mr. Gotto, an Italian sanitary engineer. It was bought in 1950 and converted into six maisonnettes by Alexander Gibson. Professor Pevsner, in the volume on London, Penguin Buildings of England Series, has this to say: "At the corner of Well Road, "The Logs," a formidable atrocity, 1868, by J. S. Nightingale. It exhibits yellow, red and black brick, excrescences in all directions, arches pointed and round, motifs Gothic and Frenchified. The details of the tower are as wilful as if they were by Belcher about 1910."

DOMESTIC ELECTRIC INSTALLATIONS

THE MAIN SUPPLY

The Board terminate the service cable just inside the consumer's premises with their main fuse: they will need to know the number and types of appliances likely to be used by any new occupier so that this cable and fuse can be sized to take the anticipated load with a margin for future additions. The supply being standardised at 240 volts A.C., the incoming main has two wires, the " phase conductor " which is live, and the " neutral conductor " which is earthed. All cables on the premises stem from these two.

Traditional Circuit Arrangements

After leaving the Board's main fuse, the cables pass to the meter and from thence (e.g. in an average six-room house) to the circuits which serve the lights, socket outlets, cooker, water heater, etc., each circuit being controlled by a main switch and fuse. From each of the main switches on the lighting and socket outlet circuits, the cables go to a distribution fuse board, where they split into sub-circuits as shown diagrammatically in Figs. 1 and 2.

The Lighting Sub-Circuits

Every sub-circuit which originates from the lighting distribution fuse board is generally limited to a total load of 1,000 watts and fused accordingly. This would allow for 16 lamps of 60 watts to each sub-circuit, but the general practice is to serve the fixed lights from separate sub-circuits for each floor, connecting some 2-amp. socket outlets on the same sub-circuits if the number of lights served is small. In these circumstances a faulty appliance or flex connected to such a socket outlet may put a number of rooms in darkness when it causes a fuse to blow. As these 2 amp. socket outlets can only be used for table lamps, and radio or television receivers, 5 amp. socket outlets are also provided, each on its own sub-circuit, for appliances loaded at 500-1,000 watts.

" Power " Sub-Circuits

For larger appliances, 15 amp. socket outlets (" power points ") are provided, a separate distribution fuse board being installed for them. Each 15 amp. socket outlet has its own sub-circuit and fuse, capable of taking 1,000-3,000 watts (Figs. 2 and 3b). Appliances of a lower loading than 1,000 watts should not be used on one of these socket outlets through an adaptor unless the adaptor or the plug is fitted with a fuse of the lower rating suitable for the appliance to which it is connected.

In view of the heavier loading, the cooker circuit requires a larger cable than the lighting or power circuits, and has its own main switch and fuse at the meter position (Fig. 2).

Disadvantages of the Traditional Arrangement

Lack of interchangeability due to the use of three sizes of socket outlet is a serious defect of the old system (see D.I. 1). If an adequate number of socket outlets is to be provided, the cost will be unnecessarily high due to the great length of cable required to run from the distribution fuse board to each socket outlet and back again, no matter how close the socket outlets may be to each other. It was to eliminate these difficulties that the universal 13 amp. socket outlet was introduced with the ring circuit system just after the war.

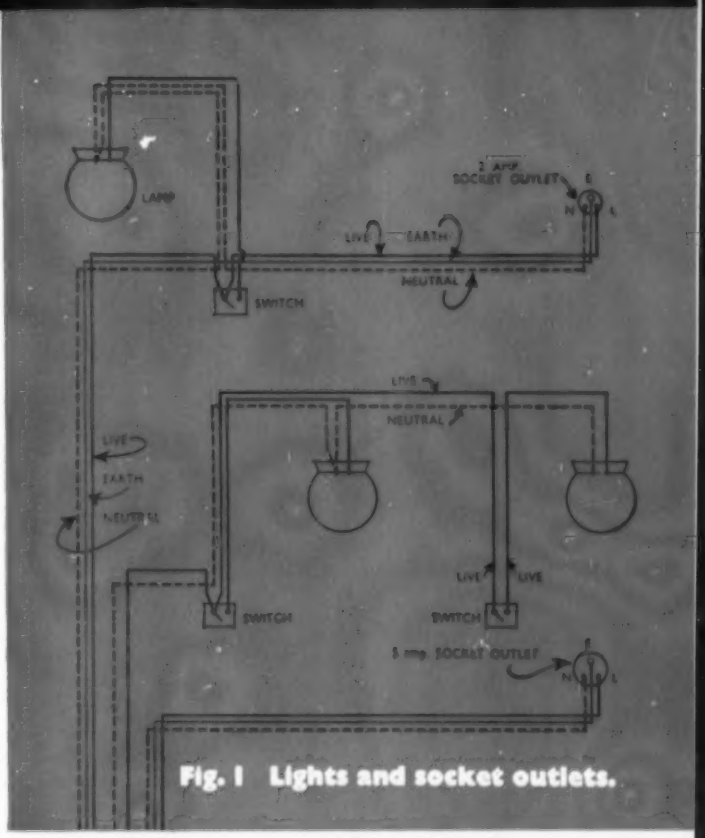


Fig. 1 Lights and socket outlets.

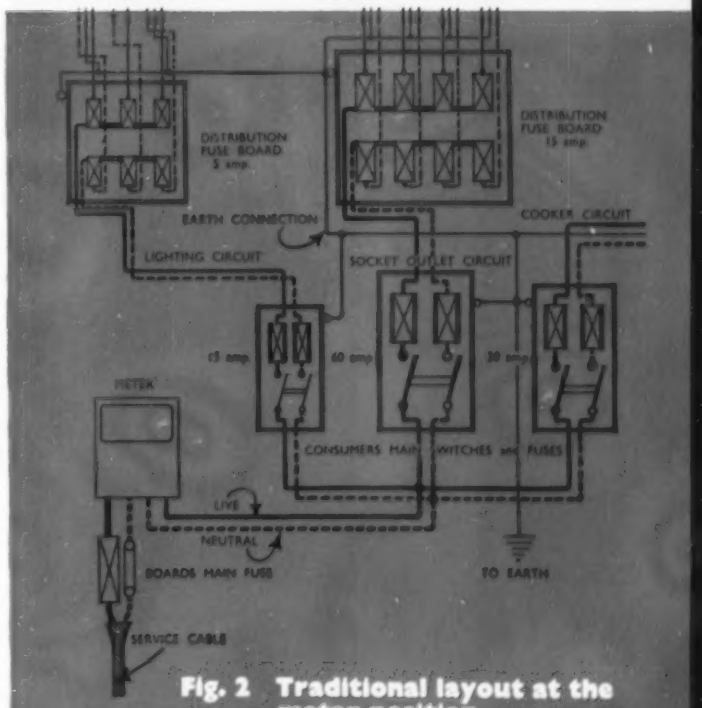


Fig. 2 Traditional layout at the meter position

D.I.2

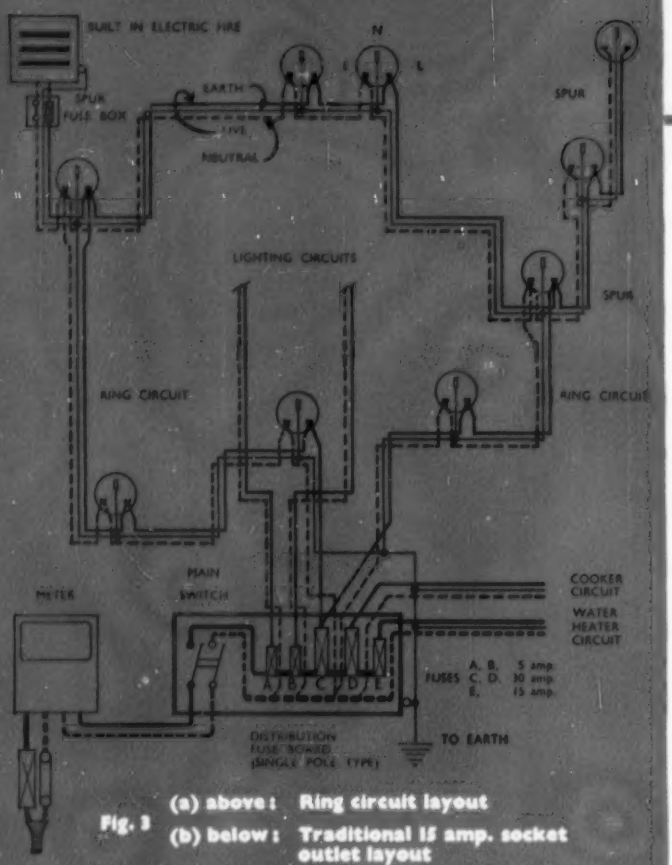
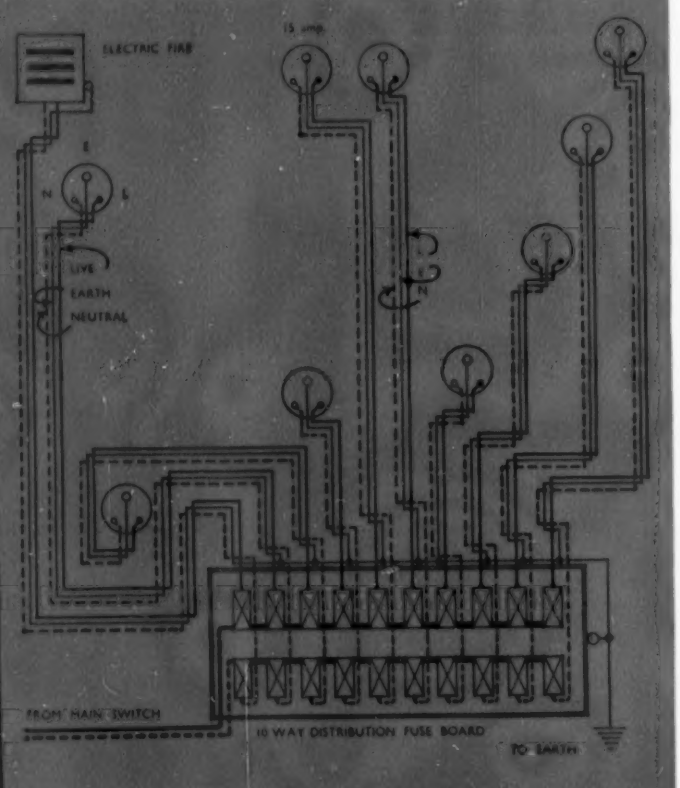


Fig. 3 **(a) above: Ring circuit layout**
(b) below: Traditional 15 amp. socket outlet layout



The Ring Circuit System

A ring circuit is a sub-circuit in which the pair of conductors form a loop starting from and returning to the same terminals on the distribution fuse board ; it can serve a considerable number of socket outlets on the way because it receives electricity from each end. Compare the diagram in Fig. 3a with the traditional system shown in Figs. 2 and 3b.

After specifying the sizes of the conductors, the Regulations for the Electrical Equipment of Buildings issued by the Institution of Electrical Engineers state in effect that : the rating of the fuse protecting a ring circuit must not exceed 30 amps. : in houses or flats of less than 1,000 square feet floor area any number of 13 amp. socket outlets with fused plugs may be served by a single ring circuit : above that floor area no ring circuit may serve more than 10 such socket outlets : spurs may be taken from a ring circuit to outlying socket outlets (see Fig. 3a) of the same size without intermediate fusing, provided that the number of socket outlets served by each spur does not exceed two, and that the total number of spur socket outlets does not exceed the number served directly by the ring circuit.

Fixed Appliances and the Ring Circuit

Fixed appliances such as electric fires and convectors must not be just plugged in to the nearest socket outlet : this would mean that the flexible connection of an inset fire, for example, would be partly embedded in the plaster, which is a most unsatisfactory arrangement. The difficulty is overcome by wiring the appliance direct to a spur fuse box (with appropriate fuse) mounted in the wall immediately adjacent and served by the ring main in the same way as a socket outlet. The sum of the current ratings of all such fixed appliances fed from a single ring main must not exceed 15 amperes. It is quite in order, however, for appliances such as refrigerators and water heaters, which although not technically " fixed appliances " are rarely moved about, to be plugged into universal 13 amp. socket outlets.

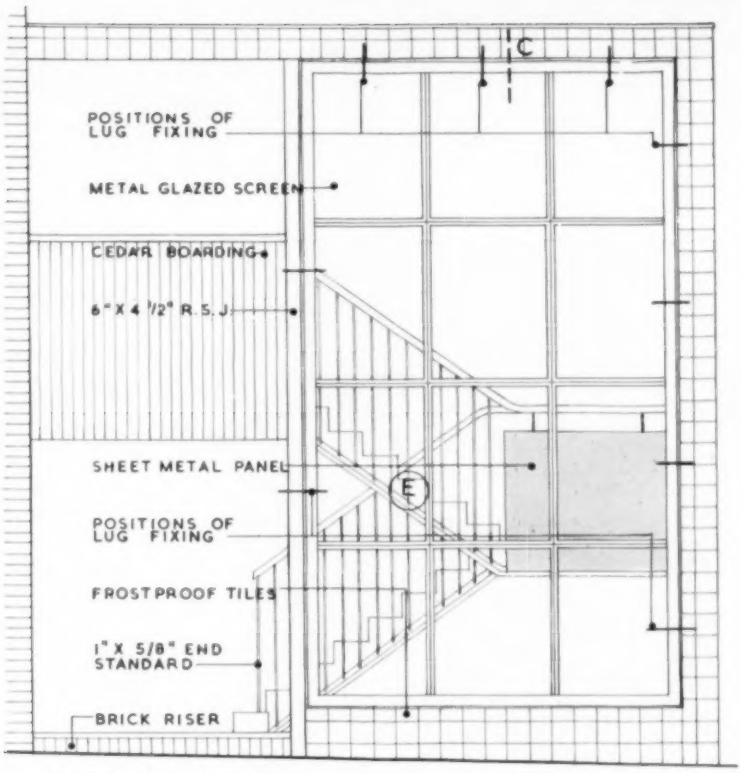
The Consumers' Service Unit

In older installations, fuses were invariably included in both the live and neutral conductors in a circuit (double pole fusing), which necessitated bulky equipment. Current regulations, however, permit the use of a single fuse inserted in the live conductors (single pole fusing) resulting in a remarkable simplification at the meter position (compare Figs. 2 and 3a). The installation is now reduced to its simplest terms : the Board's main fuse, the meter, the consumer's main switch, then a small number of sub-circuits each with its own fuse. With the exception of the meter these items can now be obtained in the form of small neat units. The smallest provides four sub-circuits, one for lighting, one ring circuit, one for the cooker, and one for the water heater, whilst others have accommodation for a sufficient number of sub-circuits for any size of house or flat. In every case neatness and simplicity are combined with ease of access and absolute safety.

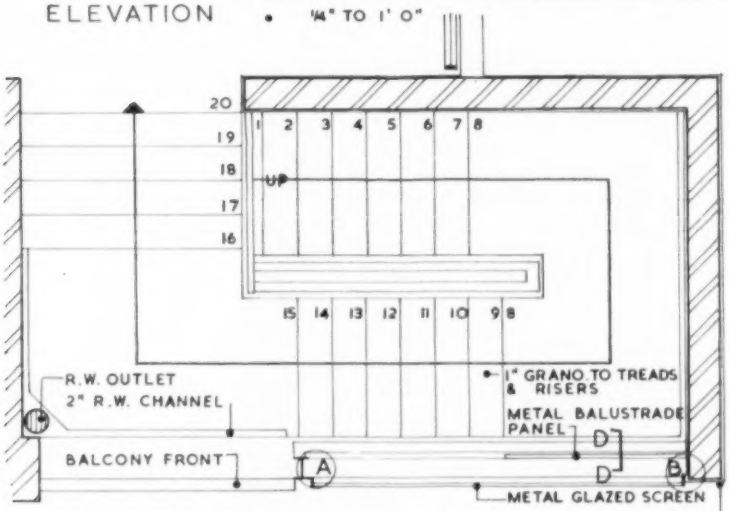
For further details apply to :

D.I.2 **British Electrical Development Association**

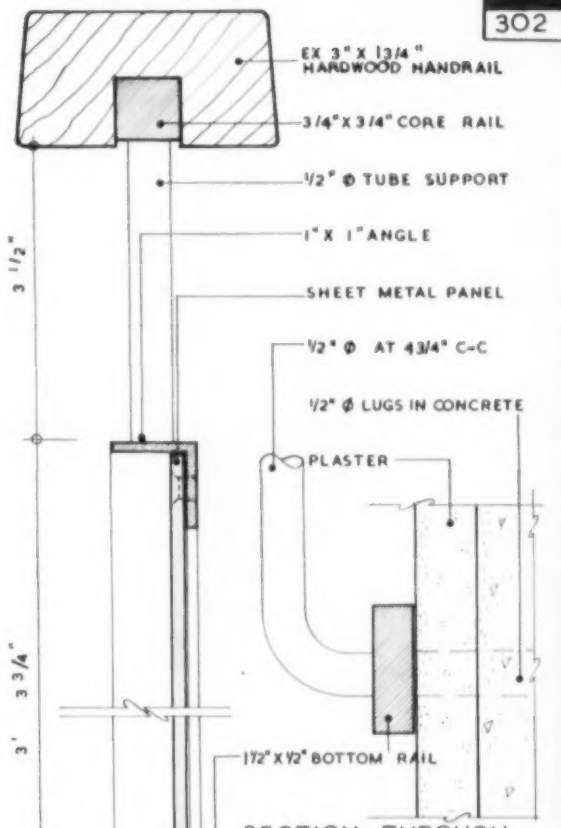
2 Savoy Hill, London, W.C.2. Temple Bar 9434



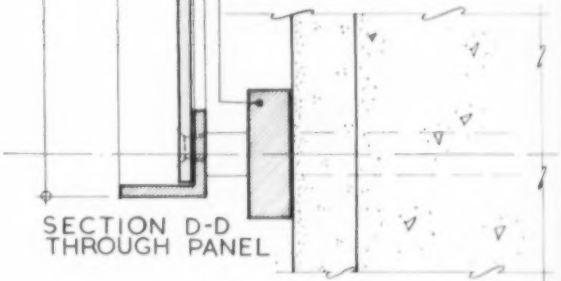
ELEVATION • 1/4" TO 1' 0"



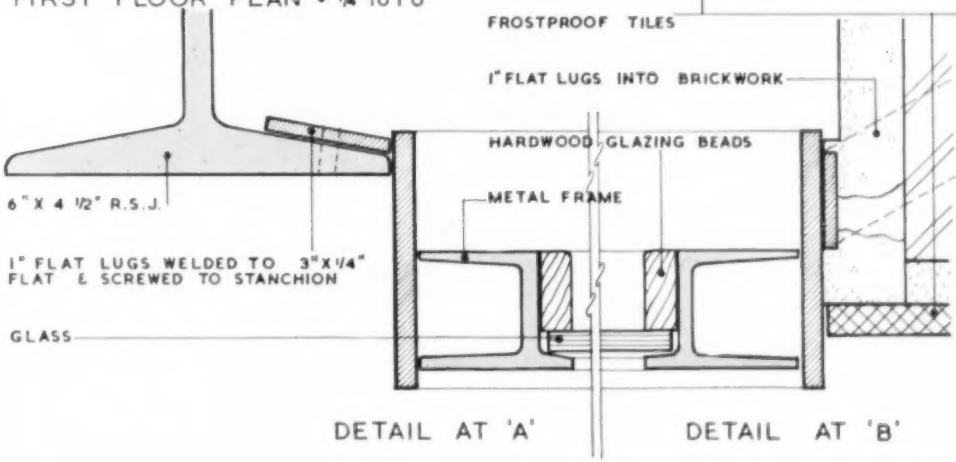
FIRST FLOOR PLAN • 1/4" TO 1'0"


EX 3" X 1 3/4" HARDWOOD HANDRAIL
3/4" X 3/4" CORE RAIL
1/2" Ø TUBE SUPPORT
1" X 1" ANGLE
SHEET METAL PANEL
1/2" Ø AT 4 3/4" C-C
1/2" Ø LUGS IN CONCRETE
PLASTER
3 1/2"
3' 3 3/4"
1/2" X 1/2" BOTTOM RAIL

SECTION THROUGH BALUSTRADE AT 'E'

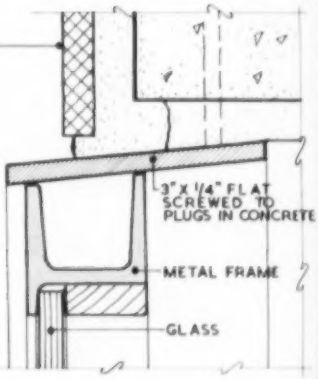


SECTION D-D THROUGH PANEL


FROSTPROOF TILES
1" FLAT LUGS INTO BRICKWORK
HARDWOOD GLAZING BEADS
METAL FRAME
6" X 4 1/2" R.S.J.
1" FLAT LUGS WELDED TO 3" X 1/4" FLAT & SCREWED TO STANCHION
GLASS

DETAIL AT 'A'

DETAIL AT 'B'



DETAIL AT 'C'

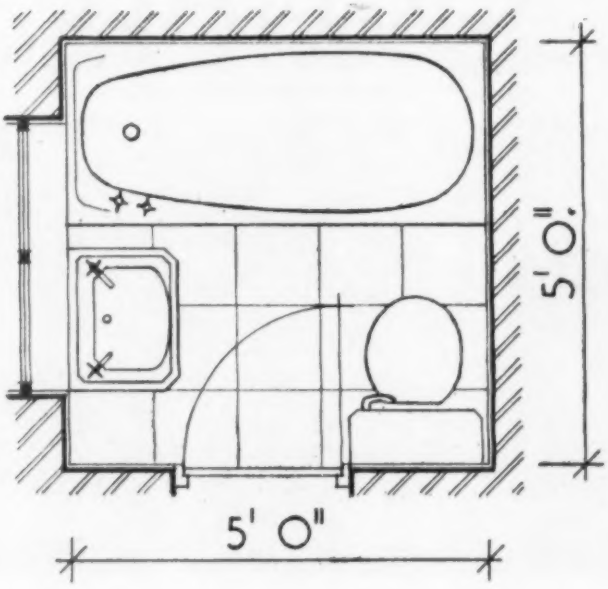
SCALE OF DETAILS • 1/2 FULL SIZE

STAIRCASE BLOCK, SHOPS AND FLATS, RICHMOND

ARCHITECTS: ERIC LYONS & PAULSON TOWNSEND

The COMPAC Bath

saves the day in a bathroom 5' x 5'



For further information about the Compac Bath write to the Housing Division of :—

NOTES:

In the ordinary way, a five-foot square is obviously an impossible space for 'a proper bathroom.' Yet here is one that many a family might envy.

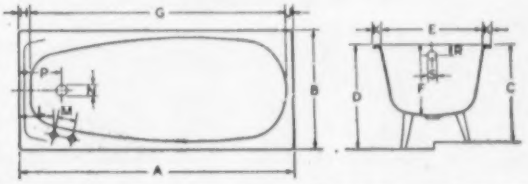
Nothing is skimped. There is no chasing or recessing into the wall.

Notable space-saving features are the recessed w.c. cistern, allowing the pan to be set further back; and the inward slant of the bath panel, giving extra toe-room for the w.c. — another, of course, is the remarkable Compac bath itself.

SPECIFICATION

The "COMPAC" Rectangular Top Bath, porcelain enamelled inside, plain painted outside; ¾" taps; 1¼" overflow; 1½" waste, plug, chain; and 1½" glass enamelled cast iron trap, above floor.

The inside contour of the "COMPAC" Bath is specially designed to give maximum bathing comfort with minimum water consumption. The arrangements of taps on the front roll greatly simplifies the plumber's work in making connections, and makes cleaning easier.



A	B	C*	D	E	F
5' 0" 1524 m.m.	2' 2" 660 m.m.	1' 9½" 546 m.m.	1' 11" 584 m.m.	1' 10½" 572 m.m.	1' 3½" 394 m.m.
G	H	J	K	L	M
4' 8" 1422 m.m.	2½" 64 m.m.	1½" 38 m.m.	1¾" 45 m.m.	7¼" 184 m.m.	4" 102 m.m.
N	P	R	S		
2¼" 57 m.m.	9¼" 235 m.m.	2⅜" 60 m.m.	1⅞" 48 m.m.	* Standard Height unless No. 3A Foot is specified	

The internal length is only 3" shorter than the standard "Magna" bath, and the depth of water is the same. The bath itself is 1½" lower than standard, which makes it easier of access for the old or infirm and more convenient for bathing children.

Notable plumbing features are:

- Far shorter fixing time because tap connections are easier.
- The bath is designed to take the well-known "Cobra" combined waste-overflow fitting, which again reduces fixing time.
- Far easier access to connections. (Drawing shows separate detachable panel for this.)
- The underside of the roll of the bath is arranged to take a vertical panel (note that drawing does not show this) without the usual wooden framing. This panel is fitted with small steel brackets which can be quickly screwed to the floor.

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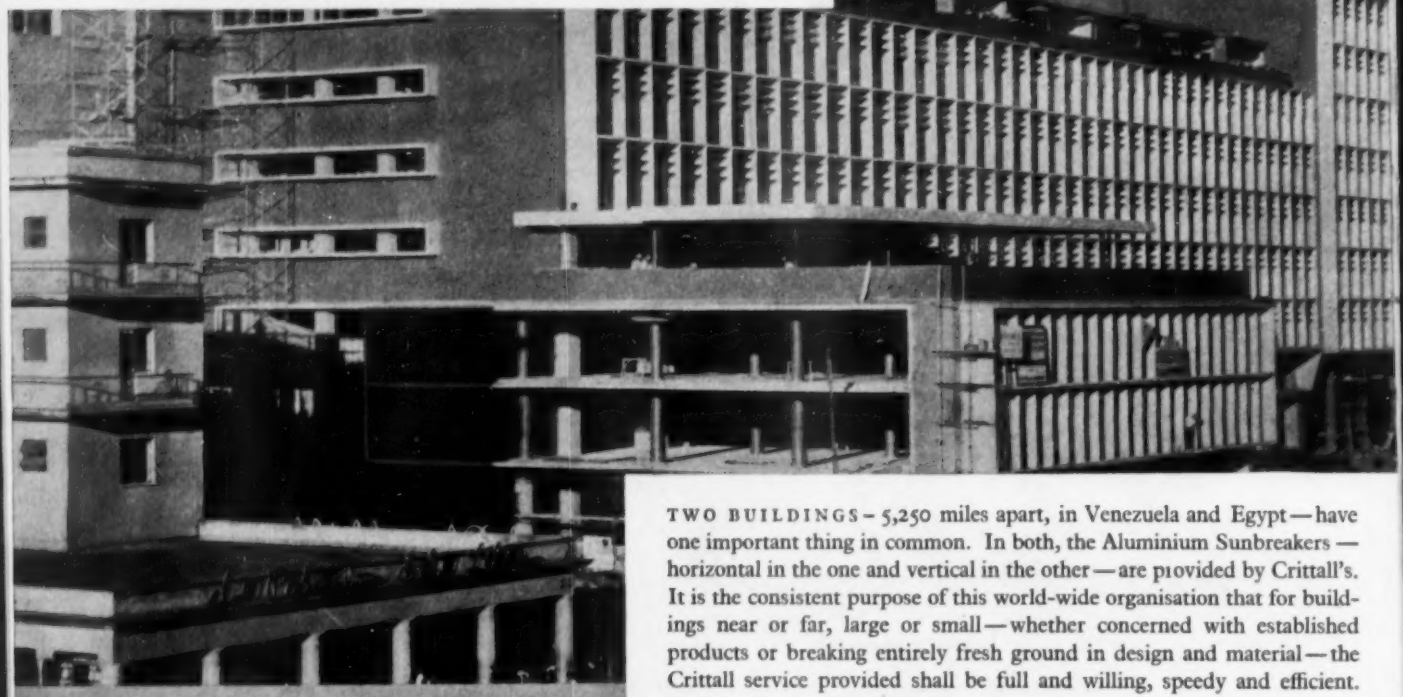
28 Brook Street, London, W.1.

ALUMINIUM HORIZONTAL SUNBREAKERS

This illustration shows THE C. A. OBRAS BUILDING, Avenida Bolivar, Caracas
(*Architect: Dr. Cipriano Dominguez*)
which is fitted with CRITTALL HORIZONTAL ALUMINIUM SUNBREAKERS.



TWO BUILDINGS – 5,250 miles apart, in Venezuela and Egypt — have one important thing in common. In both, the Aluminium Sunbreakers — horizontal in the one and vertical in the other — are provided by Crittall's. It is the consistent purpose of this world-wide organisation that for buildings near or far, large or small — whether concerned with established products or breaking entirely fresh ground in design and material — the Crittall service provided shall be full and willing, speedy and efficient.

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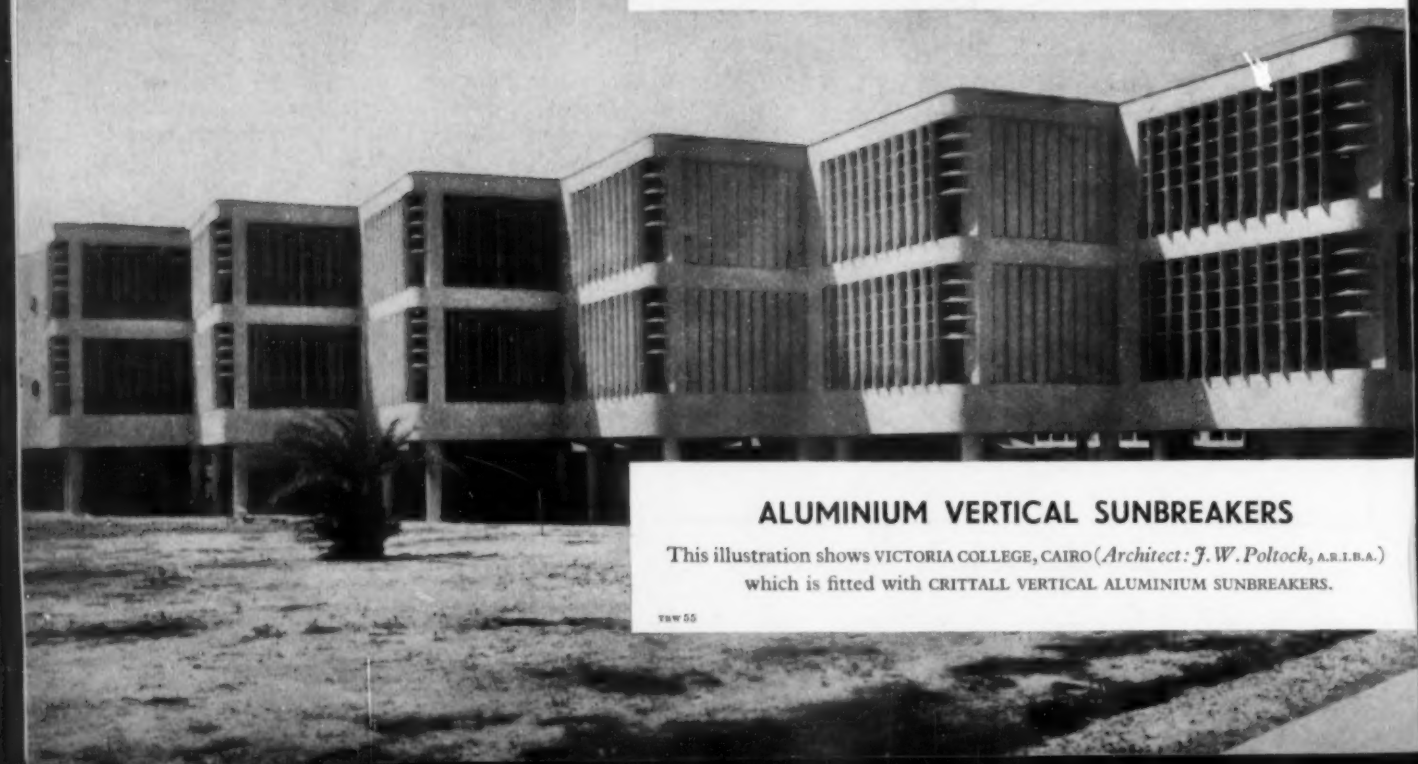

ALUMINIUM VERTICAL SUNBREAKERS

This illustration shows VICTORIA COLLEGE, CAIRO (*Architect: J. W. Poltock*, A.R.I.B.A.)
which is fitted with CRITTALL VERTICAL ALUMINIUM SUNBREAKERS.

TBW 55

BUNGALOW AT 57, HAM STREET, HAM COMMON, SURREY. ARCHITECT: STEFAN BUZAS (JAMES CUBITT & PARTNERS).

of its kind built as part of a planned estate or community.

57, Ham Street, is a bungalow and only sanitary and sleeping space is segregated from the remaining life of the household. Even then these spaces are not visually separated as the architect explains that the "continuity of the ceiling" is preserved by partitions not being erected to the full height of the rooms, or where they are, being "transparent for the top four foot or so." The economics of middle-class life have provided the practical justification for this plan, increasingly familiar as a type since the 30-year-old prophetic and visionary influence of Le Corbusier first laid its hold upon architectural thought and practice throughout the western world.

It is clear that the two differing ages in which they were built have had a direct effect on the appearance of these two houses. In the mid-nineteenth century people built for themselves and their successors, for they and their kind were secure and would last for ever: to-day the life and future of the individual is expressed in an exaggerated understatement. It is the old and new world expressed in the house. This contraction reflects a condition of living which we do not, however, find echoed in the "cottage" which, after all, is the home of the "common man" to whom this century is dedicated.

The State-subsidized single-family cottage is undoubtedly the most important domestic building of this mid-century; change is less noticeable here than in practically any other type of building. What change there is is limited to a comparatively small degree of internal expansion. Along with this expansion has come the benefit of modern equipment and sanitation (shared by all classes), with the result that the standard of living in the home has been substantially raised. But the space requirements remain fundamentally the same, for whilst (for want of better terms) the professional and executive classes have had to adjust themselves down to the new economics of life, the labourer, artisan and clerk (whilst adjusting themselves upwards as they are entitled to do) are not compelled to shoulder the burden of a relative expansion in space in order to enjoy their rise in living standards. The cottage of 1954, therefore, is (when not deliberately reminiscent) surprisingly similar to the cottage of 1854 in plan, structure and appearance. In continuing this improved tradition of humble cottage building, architecture in these post-war years has, nevertheless, met its severest test. For a crucial ten years the one type of design for which this country has always been acknowledged pre-eminent has been subjected to the most stringent restrictions probably ever known in architectural history: to provide "bricks without straw" would not have worried us. Bricks, steel, cement, timber have all been unobtainable at one time or another during this period; each has been comparatively plentiful when the others have been scarce. The result has been a vast competitive scramble within the building industry, helped by architectural consultants and encouraged by two governments, to provide as many houses as possible in the shortest possible time. In a few cases, both in the case of traditional and non-traditional work, first-class brains have accepted the architectural challenge, but with very few exceptions nothing has come of this struggle which could lift the cottage out of the familiar pattern of the last 150 years.

There are two principal reasons for this. The first is that the great majority of these houses are erected by small builders whose experience, organization and equipment are not ready to cope with the highly specialized modern structural techniques which would be most likely to change the appearance of cottage building. The second is that public opinion throughout the country (particularly away from the sophisticated influence of great cities) is not willing to have any version of the "new architecture" imposed upon its parochial, rural, provincial or insular environment. This practical and unblinking conservatism finally makes certain the similarity between the cottage of yesterday and to-day. Compare the two plans.* The main difference is in the matter of equipment, but this takes up comparatively little room and hardly affects the external appearance. The simple principle of living space downstairs and sleeping space above is identical. The difference is one of amplified use and the improvement and sub-division of those essential spaces. The early plan is about 1750, but a later of the same kind would merely have been more nearly identifiable with the current one. In accepting these facts and acknowledging the still fertile field of design within these traditional limitations, we are up against the comparatively recent æsthetic problems raised by designing in bulk. Whereas the house in 1854 was a single architectural problem, this is now true not only of the terrace or square, but of the whole estate. Designing in bulk in this way needs a greater span of years to attain maturity

* *Page 512.*

than in the case of single houses or small groups, and this fact, not clearly understood by the consumer, has brought much undeserved criticism on some intrinsically good work. A partial answer to this is to be found in "mixed development," of which more anon.

But first the flat. Here is the one type of dwelling which has been forced for strictly practical reasons to evolve for itself a purely contemporary form. Flats (and by this term is meant blocks of dwellings of more than three or four storeys) are inconceivable in terms of timber and weatherboarding, of brick and timber, or in the exact terms of pure masonry construction. All of these methods are ruled out on economic grounds alone, although under varying circumstances they are quite reasonable alternatives for a house. We are left with thoroughly twentieth-century structural methods, using steel or reinforced concrete. All of these, although they can clearly be used to support a simulacrum of the middle-ages or of the renaissance, cry out for a separate and appropriate architectural expression. This they are getting, and as far as flat designs are concerned, the result is not only novel but (and this is far more important) acceptable. The reason for its ready acceptance is that, in the first instance, the device is generally only used in areas where a high density is necessary and where flat life has been the lot of a large proportion of people for at least two generations; and secondly, those who are moved into them are pleased with their convenience, spaciousness, absence of stairs, and the fact that the child problem is usually pretty well catered for. The increasing popularity of the maisonette has, in addition, its own traditional contribution to make. The flats of the 'fifties and 'sixties were really only tenements, glorified self-service lodging houses. Those built later when the West End became flat-conscious were remarkable rather for their efforts to retain an appearance (albeit a swollen one) of the mansion than for anything revolutionary in their internal economy.

The general housing picture to-day exhibits two distinct trends which give a much clearer indication of development than could possibly have been the case for the 1850s. First there is the forward-looking work of certain architects in private practice in the fields of private and state-aided housing. This work is helped by the increasing number of firms both interested and well equipped to carry out designs demanding new and sometimes experimental techniques, in the design of small houses as well as larger works comprising flats and maisonettes. Secondly, there is the major part of state-aided and speculative housing throughout the country which is mostly carried out by small firms of "traditional" builders well able to compete in work of under four storeys with any of the new techniques in small house construction which have so far made their appearance. These techniques are supplied by the vendors of proprietary systems of construction, mostly offered as complete house types. The systems are marketed by efficient organizations, many of which have architectural advice or staffs, but whose design policy is devoted to achieving the closest possible resemblance to the traditional cottage of brick and timber; this is largely responsible for keeping state-aided cottage housing (from an æsthetic point of view) in a rosy glow of mediocrity. To offset this, however, there is the planning development, now officially encouraged and being taken up with some enthusiasm in other cities as well as London, known as "mixed development." This method of layout offers a solution to a problem which is both architectural and social. By its adoption, the design of many dwellings on one site is lifted immediately out of the crippling two-storey exercise into a solution where every aspect of accommodation and amenity is exactly expressed by architectural means. It was first brought into practical use in Gibberd's small and charming scheme at Somerford Grove in Hackney, is magnificently exemplified in the Wimbledon schemes of the L.C.C., and in varying degrees at Coventry and in the New Towns. Just as important, however, as its application

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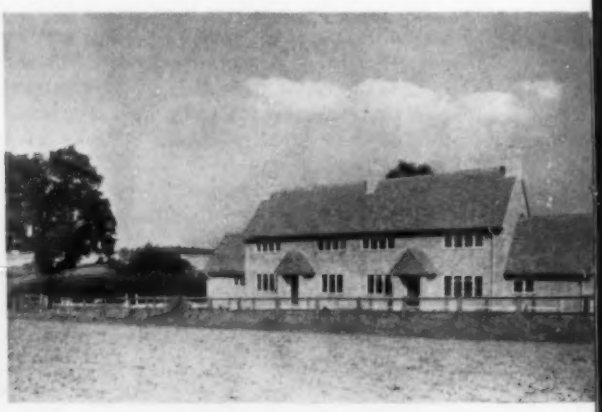
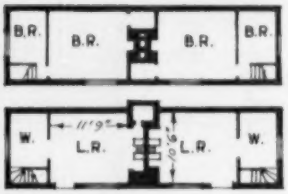
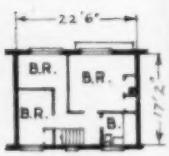


Two hundred years separate these cottages; neither is in the least self-conscious; both arrive at a similar æsthetic result in solving a similar problem.



The immature and the mature cottage plan; one from the 18th century and the other from "Houses 1952," the official supplement to the Housing Manual, 1949.



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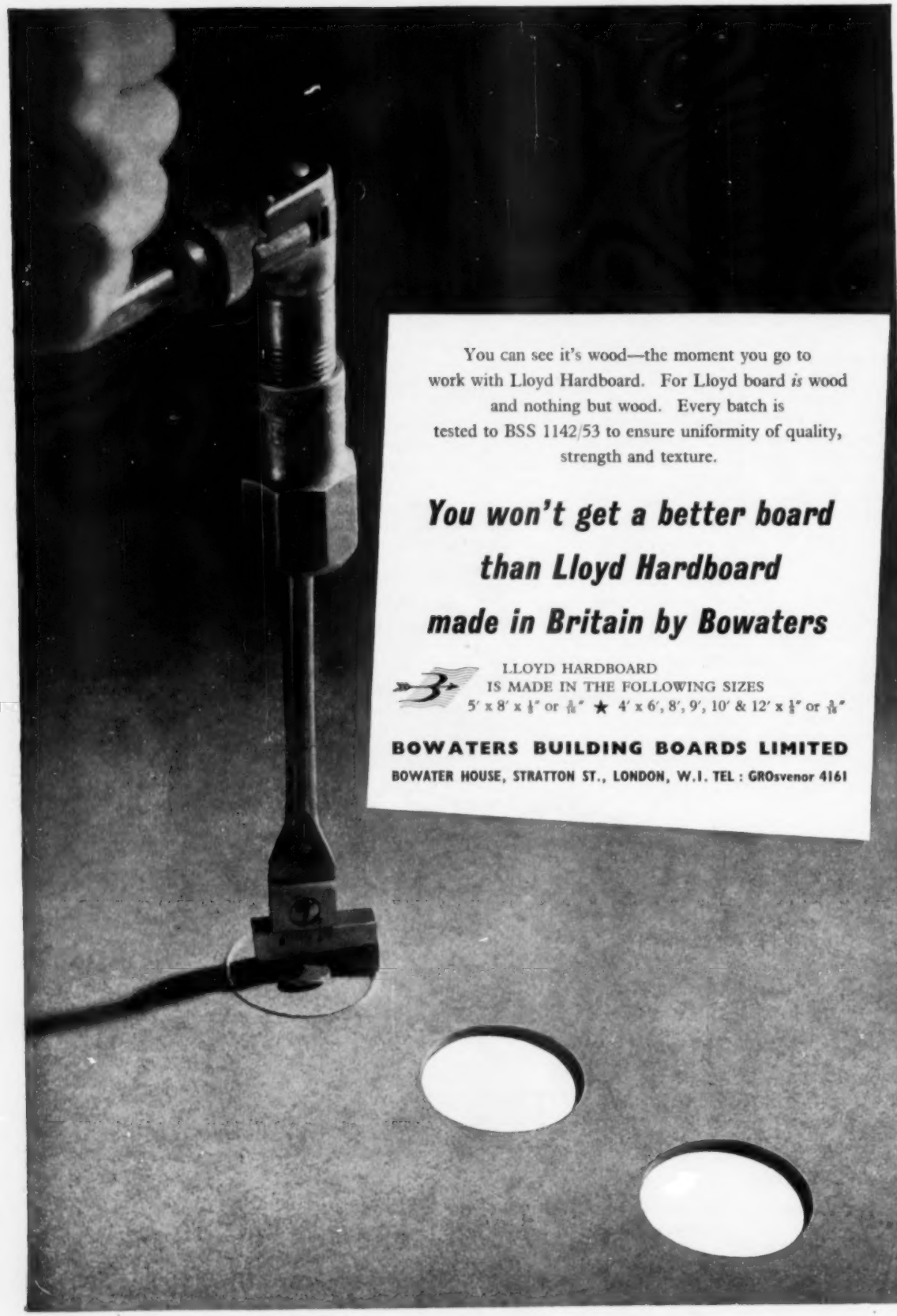
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by our best housing architects is the fact that it can render mediocrity in design positively acceptable. This is a dangerous theory, but "mixed development" is, and probably will remain for a long time, the saving of many a large scheme which could otherwise only emphasize the dreariness of repetition and ham-handedness. When the varieties of accommodation and building for a large scheme on a small site are considered from this angle the whole problem immediately becomes illuminated with new possibilities; the third dimension can now play its full part in this most trying but rewarding aspect of architectural design.

To be asked to prophesy as to the future offers a tempting bait. In the field of housing in its nation-wide sense, architectural design is unlikely to change very drastically whilst the age-old system of brick and timber construction for small work holds the field. It will doubtless continue to do so failing the introduction of a new system of construction (non-proprietary and universally applicable) which could revolutionize two-storey work in the same way that steel and reinforced concrete have revolutionized design in its wider sense. Variations on internal planning and developments in equipment or in the standardization of components will not have this effect, although they may continue to make living easier and more comfortable. In the field where the architect, by his æsthetic convictions, can demand and receive a freer hand the future is still holding out expansive possibilities. But the enthusiasm and anxiety to "go one better" must now be tempered by wisdom, for great and enduring things have yet to be done in the less exciting work of perfecting and crystallizing the considerable achievements of these after-war years.

School Building, 1854-1954

IT is pardonable to generalize about the Victorian era; there was so much of it. Documentary evidence abounds to justify any and every view of it which it is now fashionable to hold—its appalling squallor, its intolerable piety and smugness, its abject tastelessness, its unwearying energy, etc., etc. Thus, nearly every *obiter dicta* about the period is worth examining because it can hardly help proving true to a degree. At any rate, on this assumption, it is worth looking at education in 1854 as very much a matter of the Virtuous and Superior Classes aiding the lower orders of society, of Philanthropy triumphing over viciousness and ignorance, of a small caucus of earnest and not unsuccessful "do-gooders" keeping the devil at bay by pumping reading, 'riting and 'rithmetic into the heads of the children of the labouring classes. This definition of their function would have been accepted, almost literally, by those concerned with education everywhere except in the old-established public and grammar schools, or in what have been called the adventure schools, frankly commercial enterprises, sometimes genteelly run as Dame Schools, but often as shady at Dotheboys Hall. It would certainly have been accepted by that unique partnership of voluntary organizations and central government which, in 1854, was only 11 years old, but which is still to-day a distinguished peculiarity of the British educational system.

This partnership between them raised such money as was available for public education. Voluntary contributions, making up the major part, were given in the conviction that "there is indeed misery and profligacy enough obtruding itself on the most careless eye to awaken something more than a suspicion that evils exist in the present state of society calling for all the effort of an active and enlightened benevolence."[1] The avowed object of the central government's counterpart grant was "to promote the education of children belonging to the classes who support themselves by manual labour."[2] In 1854 the total sum granted by Parliament for this purpose was £326,436, of which about £60,000 was spent on building.

The missionary spirit dominated the day. Reports of inspectors give the impression of a ceaseless, even frantic, struggle to hold back the tide of ignorance. "The teacher

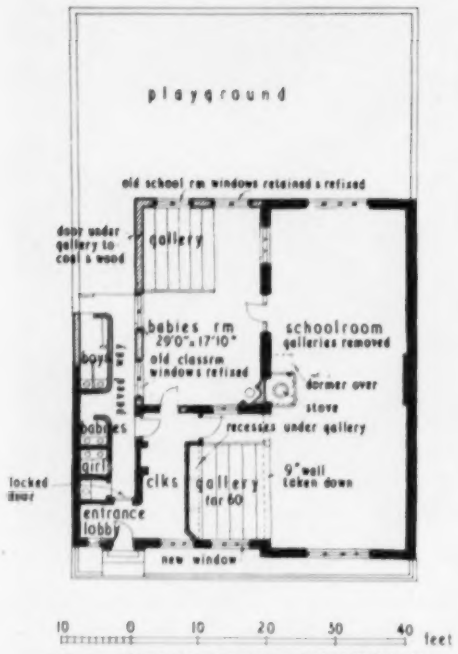

FIG. 1. NATIONAL SCHOOL IN GREENWICH.

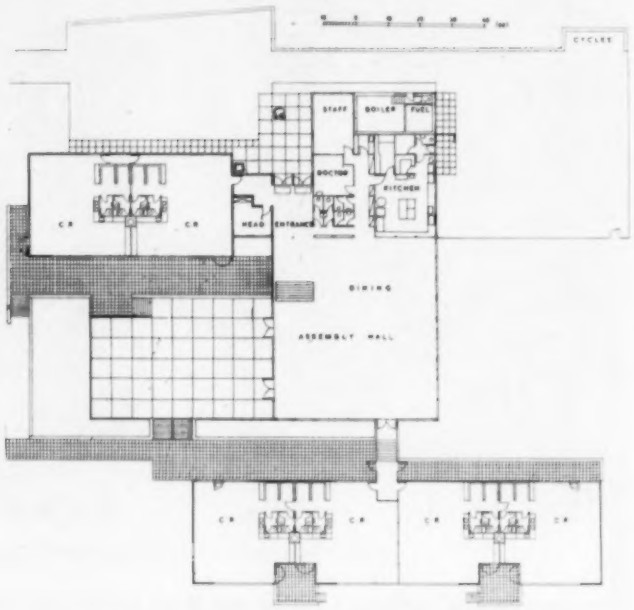

FIG. 2. BELSWAINS INFANT SCHOOL, HEMEL HEMPSTEAD. ARCHITECTS: SAMUEL MORRISON AND PARTNERS.

is indefatigable." "Mr. Milne continues to labour in his school with assiduity." "Instruction is pursued with the utmost vigour." Instruction was given either by the "simultaneous" method by which one teacher made his class (often of a hundred children or more) repeat his words in unison, or by the "mixed" method by which monitors, taking instructions from the teacher, relayed the information on to smaller groups of children. This latter system had been officially recognized in 1846 and selected pupils were paid a small grant to serve as pupil teachers. This method was in its heyday in 1854.

School building and school architecture played a neutral part in the campaign. They did not influence the shape of education; they merely conformed to requirements—a large room to house as many children as could be got into it. The National Society had advised that "the form of the school room should be oblong—a barn furnishes no bad model and a good one may be easily converted into a school room."[3] The suggested area per pupil was 7 sq ft, or, allowing for absentees, 6 sq ft. The Manual of the British and Foreign School Society advocated a room in the shape of a parallelogram but did not provide a plan to show how this was to be done. By 1840, the Committee of Council had taken to issuing standard plans of oblong school rooms. For the simultaneous method of teaching, the children were ranged in rows of desks, possibly 100 in a 700 sq ft room. For the mixed method, some desks were ranged flat against the wall on at least three sides of the room, each wall under the charge of a monitor. With the advent of pupil teachers, the main room was divided up by curtains or folding doors (for which there are many amusing designs in the trade literature of the times). A frequent feature was a gallery over the school room to take a substantial number of the pupils. It seems that the idea of separate classrooms was born hard, and when it did emerge it took the form of classrooms arranged round, and opening direct from, three sides of the central hall, thus creating the typical form of the elementary schools known to all and still attended by some to-day.

Figure 1 shows something of the history of a national school in Greenwich. The large school room on the right was originally built in the 1850s. The additions and alterations were made in 1892. Even at this late date, however, galleries were still being provided (160 sq ft for 60 children). The style of the original and the addition was, of course, Gothic. It is of interest that in an American book published in this country in 1854,[4] a Gothic school room at Brentwood, Essex, of this type was illustrated with the comment: "A school house in this old English domestic character would give a pleasing variety to the everlasting sameness of our rural school architecture." The American schools illustrated are universally in classical style—plain school rooms with Gibbsian dressings, small town schools like Greek temples à la Athenian Stuart, and be-porticoed urban high schools à la Smirke. The English Gothic was not, however, of early curly richness; it was plain homespun stuff, without ornament, recognizable mainly by pointed windows and steeply sloping gables. The cost per place would have been anything between £3 and £10.

Furnishings and decoration were tuned to the same minor key. "Short and pithy expressions from the works of the wise and learned, or moral maxims and proverbs, both sacred and profane, *printed in large letters*; appropriate pictures or likenesses of eminent men and women, particularly of the Queen, Prince Albert, etc.; also their busts or busts of philanthropists and other men and women eminent for great and good work, as Howard, Wilberforce, Grace Darling." "The colour of the walls is not an

important matter. Yellow should be avoided. A light cheerful grey is good, and light greens are much liked by teachers."[5] That, perhaps, is the epitaph on the schools of Victorian England—a light cheerful grey, or should it be a dark cheerful grey? One can argue it both ways.

To jump to 1954 is to pass over a hundred years of almost immeasurable change. If education in 1854 was driven by the mill race of private benevolence and public charity, in 1954 it is borne merrily along in the mid-stream of State welfaredom. It is built deeply, sincerely and, in spite of the usual twaddle talked, irremovably into the political doctrines of both major parties. At last education is securely endowed in gilt-edged. The total cost of public education in 1954 will be about £250 million paid out of taxation, plus seven or eight shillings out of every pound in local rates. Of this total perhaps £60 million will be spent on new educational buildings. Just under 200,000 children will be provided with a new school place. Each place in the primary school illustrated in Figure 2, designed in 1954, will be 44.9 sq ft in area and will cost £140.

Unlike its predecessor in 1854, the school in Figure 2 sets out deliberately to make a contribution to, possibly even to influence, the educational process. The bio-politics of welfaredom assume that the fundamental changes are achieved by modifications to environment. The post-war schools will certainly afford an excellent testing ground for this thesis, for no one will deny that they have created a new type of environment—one that rejects the old institutionalism, seeks the domestic scale, enthusiastically makes the most of colour, line and texture, does not apologize for trying to be comfortable, and calls in science to help solve some of the still outstanding problems of lighting, heating, ventilation and sound. Into this new environment we are putting some 200,000 children yearly who come from homes the environment of which reflect the ideas of anything from about 1880 to 1939.

What will happen to these children? It is better to be somewhat sceptical than sentimentally optimistic. For the important question to ask is not what modifications to environment are required, but what fundamental changes do we seek. In spite of the extraordinary number of exciting and imaginative post-war schools, it is striking that educational thinking has so far failed to give a coherent lead as to what is really needed in the way of school buildings. In this vacuum it has been the politician who has determined the social purpose of education and the architect who has created the environment around it.

To ask, therefore, what sort of schools will be built in 2054 is to ask what structure of society the political forces of that time will be trying to establish. One can already see the architectural implications for school building in the current controversy over the comprehensive school. This problem, if it has been raised by educationists, is being, and probably ultimately will be, determined by politicians. The school of 2054 will merely reflect, the architect helping to act as mirror, the fate of those concepts which are already terms of jargon—parity of esteem, equality of opportunity, welfare economics, planned society, the preservation of an intellectual elite, totalitarianism, the free world. The editor of a large popular daily newspaper recently asked the present writer to give a picture of the school of 2000, but refused to clinch the deal when told that there was no likelihood of his illustrator being able to show a picture of a vast rotunda, with the children reclining on couches round the walls and the teacher in the middle operating press buttons to call on the devices of television, radio, film, 3-D and all. The innate common sense of teachers will prevent such absurdities, but can it, unless it addresses itself positively to the problem, prevent schools of the future from being mainly expressions either of current political slogans or of passing architectural fashions?

[1] *"Hints on School Building," British and National School Society*, 1874, *but written in* 1863, *page ii.*
[2] *"Minutes and Regulations of the Committee of Privy Council on Education, reduced into the Form of a Code,"* 1860, *paragraph* 4.
[3] *Quoted in "Work of the London School Board,"* 1900, *page* 55.
[4] *"Principles of School Architecture," by Henry Barnard.*
[5] *"Hints on School Building," pages* 84 *and* 77 *respectively.*

Standardization through a Century

ONE tends to forget that standardization is not a development of the last fifty or hundred years, although, during the latter period, it may have changed its form. An examination of Georgian, Regency and Victorian houses shows the obvious signs of a high degree of standardization and it is the use of this standardization which has made the streets and squares in London and many of the towns. It also contributed to the making of the dreariness of some of the rows of Victorian houses. From an examination of the better buildings it seems as if there was a willingness on the part of the architects of the earlier periods to use stock details and it may be assumed that each time they built they did not always attempt to redesign such details as windows, front doors, and the like but went back to their plan chest and repeated their previous designs. An examination of the less good buildings of the Victorian era, however, seems to indicate that the architects took little interest in assisting with the standardized designs and in fact left the designs to the builders. It may be that a comparison indicates a lesson for the future and that architects will again take a leading part in the preparation of standards. Towards the end of the last century there was an even more complete departure from this acceptance of standard details and there was a consequent tendency to design something different for each new job and to achieve buildings with very individual characters but losing the co-ordinate appearance of whole streets.

The impact of mechanized production began to make itself felt in a small way in the building industry towards the end of the last century, and this led to the development of standardization of quite a different nature, aimed at taking advantage of providing repetition work more suited to machines than that provided by short runs to

special individual designs. The first piece of standardization of this type, which led directly to the formation of the organization now referred to as the British Standards Institution, had a direct bearing on building, as this was the preparation of a standard range of rolled steel sections. This standard was followed some two years later by the issue in 1904 of the first standard for Portland Cement.

There was no very great development of industrial standards for the building industry during the next 20 years, largely because the building industry and most of its supplies were still organized to make everything required on a basis of individual orders of special design. However, early in 1930 there was a realization that there was advantage to be gained for the building industry by an increased use of standard components and materials. In consequence, a fairly considerable programme of preparation of British Standards for the building field was then undertaken. This standardization work continued slowly but steadily until the outbreak of war. During the war period, advantage was taken of standardization as a means of limiting production for a very wide range of products to economize materials which were scarce but the production of which was essential for wartime building.

Towards the end of the war the Ministry of Works set up a Committee as part of its post-war building study programme to examine the possibility of extending and revising the existing range of British Standards to assist house building immediately after the war. There was a general acceptance of the idea that a narrowing of ranges of products manufactured would permit manufacturers to concentrate their production and thus gain the maximum benefit from the available labour and materials. The work of the Ministry of Works Committee resulted in a very large programme for the preparation of British Standards so that by 1947 almost a complete range of materials and components for building houses was in existence. There was very wide use of these British Standards because it was found that these materials were generally available from stock, and therefore delays involved in the making of specially designed products were eliminated.

The expansion of the range of British Standards since 1947 has continued and, in the more recent years, a great deal of revision has been undertaken to make changes which became possible owing to the freeing of controls on materials and their greater availability. There is considerable evidence that British Standards are being more and more widely used, although there still remain a number of building designers who feel that standardization should be confined to the less obvious parts of a building, and particularly to those which do not influence the appearance, especially of the exterior.

There now appears to be a very much greater willingness on the part of the designers to re-detail every part of a building for each individual job even if this involves a very great expenditure of draughting, labour and increased costs of production. One may assume that many contemporary designers are never satisfied with the results of their work and, in consequence, are unwilling to repeat an earlier design.

Let us now turn from the position of the last 100 years and examine the contribution that standardization may make in the future. The first and quite obvious point is that in our mechanized age mass-production must be used and to use it standardization is essential. So far there appears to have been inadequate co-ordination between the standards and stock products in various fields; thus there is a great need for increased co-ordination between the various standard components, in order to simplify their assembly one with another. This point is continually in the minds of many associated with standardization, and it has been the reason for the concentration of attention in the last few years to the subject of modular co-ordination in which B.S.I. started a study in 1947. As yet there is still insufficient basic information available on which to decide what form this modular co-ordination should take if it is to be successful in achieving its aim. The U.S.A. has adopted a scheme of 4in modules which, as far as one can understand, has had only limited acceptance. The Modular Society in this country is also advocating the use of 4in modules, mainly, one gathers, because the U.S.A. adopted 4in, but it seems as if, at present, this society has paid little attention to how the assembly of these 4in products is made and, in consequence, it is unable to say what are the precise manufacturing dimensions needed for any individual product to ensure that it will assemble with the other components. The mere acceptance of products having at least one dimension which is a multiple of 4in does not seem to be any assurance of improved co-ordination in the assembly of materials. There is as yet no scientific evidence that 4in is necessarily the correct dimension. The engineering industry has accepted quite wide ranges of dimensions based on a succession of selected numbers and one has a feeling that a similar development may well be an alternative and possibly a more successful approach to the co-ordination of building materials.

For the ordinary run of buildings which are erected, there seems little justification for the use of the time and labour involved in the preparation of special designs for components and materials to suit the personal whims and fancies of individual designers, as this concept does not aid the economic use of machines, which demand a continuity of production of precisely similar articles. It is only by making full use of up-to-date production methods that we can hope to keep the cost of building within the bounds of what the nation can afford. It is imperative, therefore, that architects and other designers accept the idea of standardization of products, components, and all the equipment of buildings of the ordinary types, such as housing, and co-operate actively in the preparation of the standards. It is interesting to note that there is a fairly general acceptance of products shown in manufacturers' catalogues, and of certain proprietary building systems for parts of buildings and even for whole buildings. Why, therefore, can there not be an equal acceptance of national standardization, since the designers, as users of the standard products, are able to take a hand and in fact should be the leading influence in the preparation of these standards, instead of accepting what the manufacturer finds it convenient to his own production to offer the user often without seriously consulting him? A full acceptance of national standards seems only possible, however, if an acceptable method of co-ordination of materials and components one with another can be achieved, and therefore it is to be hoped that the studies now in progress at the Building Research Station, and at the B.S.I., will soon find a workable solution to this extremely complex problem.

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

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BUILDING

ALNWICK R.C. (a) 7 bungalows at Craster; 6 houses at High Hauxley. (b) Clerk, Old Court Buildings, 34, Green Batt. (c) 2gns. (d) Oct. 23.

* * *

BIRKENHEAD B.C. (a) 198 houses and 60 flats, Woodchurch Estate, Contract No. 14. (b) Borough Architect, 3, Conway Street. (c) 2gns. (e) Nov. 1.

* * *

BRIGHTON B.C. (a) Alterations and additions to "Tivoli," London Road, Brighton, as a home for 30 aged persons. (b) Borough Engineer, 26-30, King's Road. (c) 2gns. (e) Nov. 8.

* * *

BRIGHTON C.C. (a) Extension of a factory at Hollingbury Light Industrial Area, Brighton. (b) Borough Engineer, 26-30, King's Road. (c) 3gns. (e) Nov. 2.

* * *

EAST HAM B.C. (a) Erection of a mortuary at High Street South, E.6. (b) Borough Engineer, Town Hall, E.6. (e) Nov. 3.

* * *

EAST RIDING C.C. (a) Erection of a caretaker's house at the site of Hornsea County Secondary School. (b) County Architect, County Hall, Beverley. (c) £2. (e) Nov. 8.

* * *

ELLESMERE PORT U.C. (a) 100 flats and maisonettes, North Whitby Estate. (b) Engineer and Surveyor, Queen Street. (c) 3gns. (e) Nov. 30.

* * *

ESSEX C.C. (a) Erection of a 2-bay ambulance station, Spital Road, Maldon. (b) County Architect, County Hall, Chelmsford. (d) Oct. 23.

* * *

ESSEX C.C. (a) Additional classroom accommodation, Maldon Grammar School. (b) County Architect, County Hall, Chelmsford. (d) Oct. 23.

* * *

ESSEX C.C. (a) Completion of kitchen at Rainham County Secondary School. (b) County Architect, County Hall, Chelmsford. (d) Oct. 25.

* * *

FLEETWOOD B.C. (a) 48 houses, West View Estate. (b) Borough Surveyor, Town Hall (c) 3gns. (e) Nov. 2.

* * *

GREAT YARMOUTH B.C. (a) 60 houses at Magdalen College Estate. (b) Borough Engineer, 8a Queen Street. (e) Nov. 1.

* * *

HARROW B.C. (a) 1 block of 11 lock-up garages, Rayners Lane Estate, Harrow. (b) Borough Engineer, Council Offices, "Cottesmore," Uxbridge Road, Stanmore, Middx. (c) £2. (e) Nov. 11.

* * *

HEMEL HEMPSTEAD B.C. (a) 9 houses, 5 bungalows, 2 flats, 4 lock-up shops and 4 garages at Hobbs Hill Road, for Belswains Scheme 6. (b) Borough Engineer, Market Square, immediately. (e) Nov. 10.

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KERRIER R.C. (a) 2 bungalows and 7 garages, and construction of appurtenant site works, Cosawes Estate, Ponsanooth. (b) Messrs. C. R. Corfield and Son, Strand Chambers, 9, Killigrew Street, Falmouth. (c) 2gns. (e) Oct. 30.

* * *

LEEK U.C. (a) 17 garages in 2 blocks including preparation of site, etc., Albion Street. (b) Engineer and Surveyor, Town Hall. (c) £2. (e) Oct. 30.

* * *

LISKEARD R.C. (a) 4 bungalows, Polruan. (b) Messrs. Higman and Ford, 2, The Parade, Liskeard. (c) 2gns. (e) Oct. 30.

* * *

LONG EATON R.C. (a) 44 houses and 13 bungalows, Longmoor Road. (b) Clerk of the Council, Town Hall. (e) Oct. 30.

* * *

MONMOUTHSHIRE C.C. (a) Ground works and drainage, construction of foundations, and erection of prefabricated timber hutting for a practical room at Abergavenny Girls' County School. (b) County Architect, Queen's Hill, Newport, Mon. (c) 2gns. (e) Nov. 1.

* * *

NORFOLK C.C. (a) Erection of houses as follows: Bressingham—1 district nurse's house; East Rudham—1 district nurse's house; Walpole St. Peter—1 district nurse's house; Dersingham—1 police house; Hingham—1 office-type police house. (b) County Architect, 27, Thorpe Road, Norwich. (e) Nov. 9.

* * *

PETERBOROUGH C.C. (a) 52 houses, Walton Estate. (b) Acting City Engineer, Town Hall. (c) 2gns. (e) Nov. 1.

* * *

RUGBY R.C. (a) Erection of houses as follows: 14 houses, Willoughby; 8 houses, Brandon; 6 houses, Birdingbury. (b) Council's Surveyor, 24, Warwick Street. (c) 2gns. (e) Oct. 30.

* * *

ST. IVES R.C. (a) 4 pairs of houses, with footpaths, house drains and fencing, Pidley. (b) Messrs. Lea, Milner and Wardley, 4, Market Hill, Huntingdon. (c) 2gns. (e) Nov. 10.

* * *

SALFORD C.C. (a) Public wash house, Holland Street, Salford, 6. (b) City Engineer, Town Hall, 3. (c) 3gns. (e) Nov. 8.

* * *

SCOTLAND—INVERNESS B.C. (a) 26 houses, Diriebught Road. (b) Burgh Architect, 11, High Street. (e) Nov. 10.

* * *

SLOUGH B.C. (a) 398 dwellings, including roads and sewers, Wexham Estate. (b) Borough Engineer, Town Hall. (c) 2gns. (d) Oct. 30. (e) Nov. 22.

* * *

SOUTH SHIELDS B.C. (a) 124 houses, Whiteleas Estate. (b) Borough Engineer, Town Hall. (c) 2gns. (e) Nov. 8.

* * *

SWANSEA. (a) Erection of new works and offices, East Approach Road, Swansea. (b) Messrs. T. Alwyn Lloyd and Gordon, 6, Cathedral Road, Cardiff. (c) £2.

* * *

WALTHAM HOLY CROSS U.C. (a) 9 prefabricated concrete garages, Paternoster Hill Estate. (b) Council's Surveyor, Town Hall, Waltham Abbey. (e) Oct. 30.

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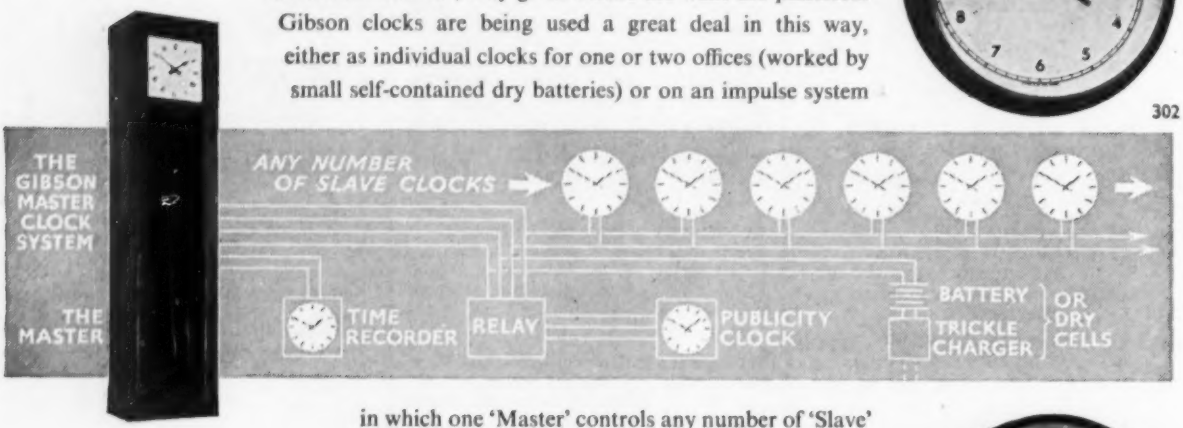

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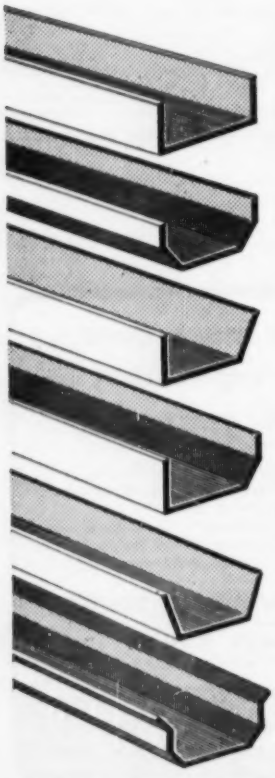

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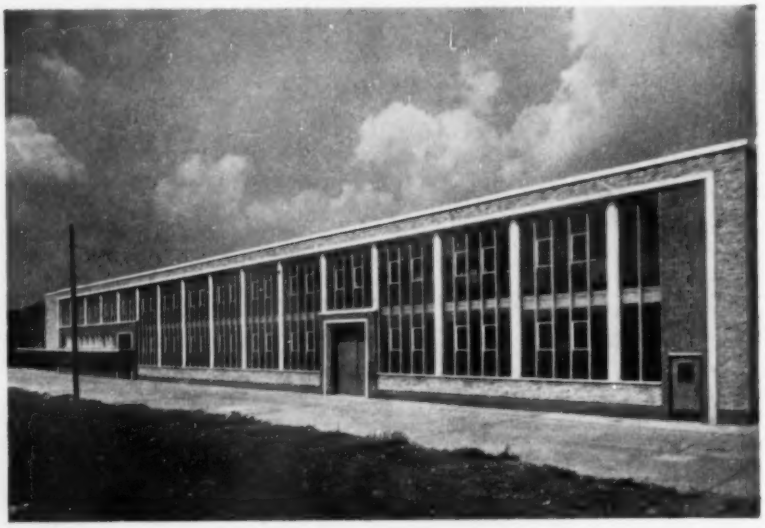

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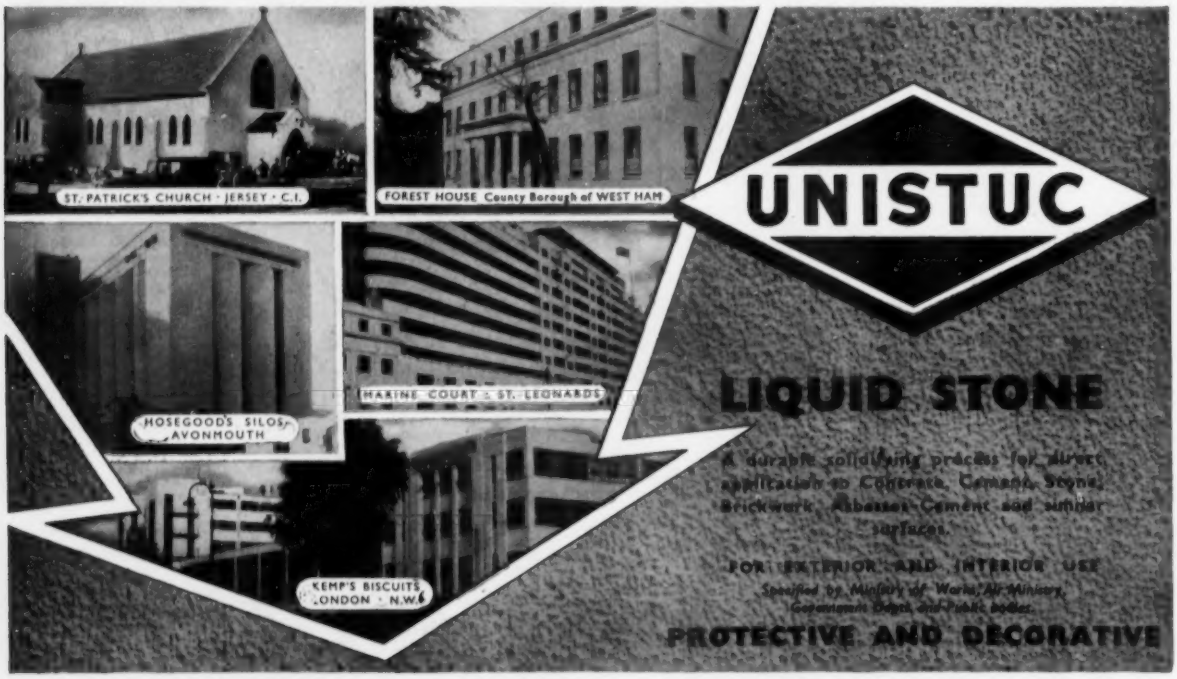
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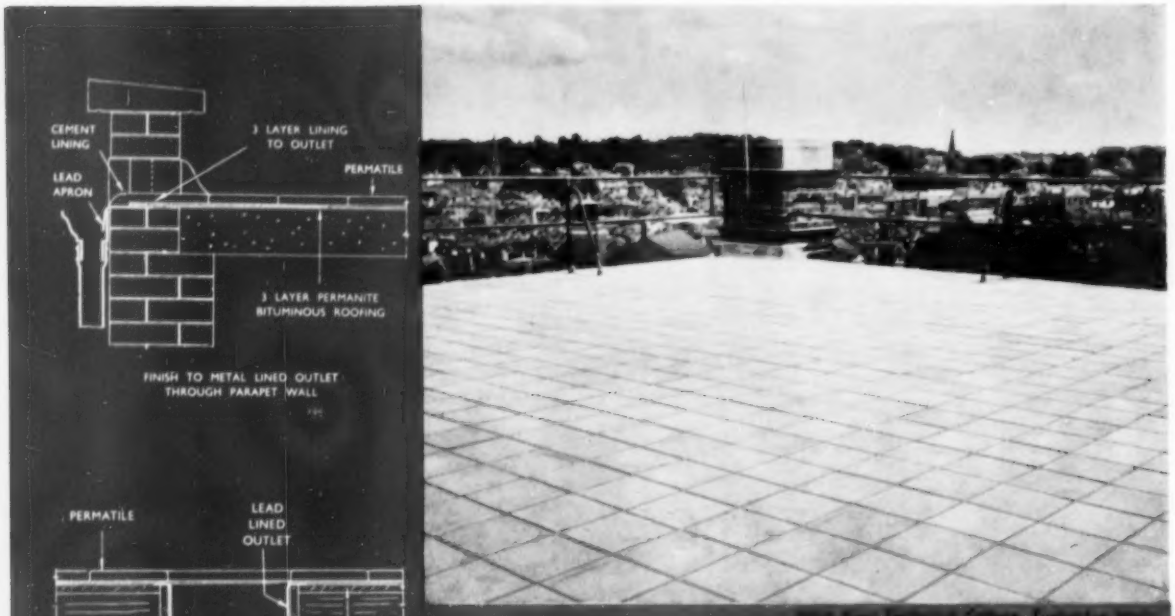

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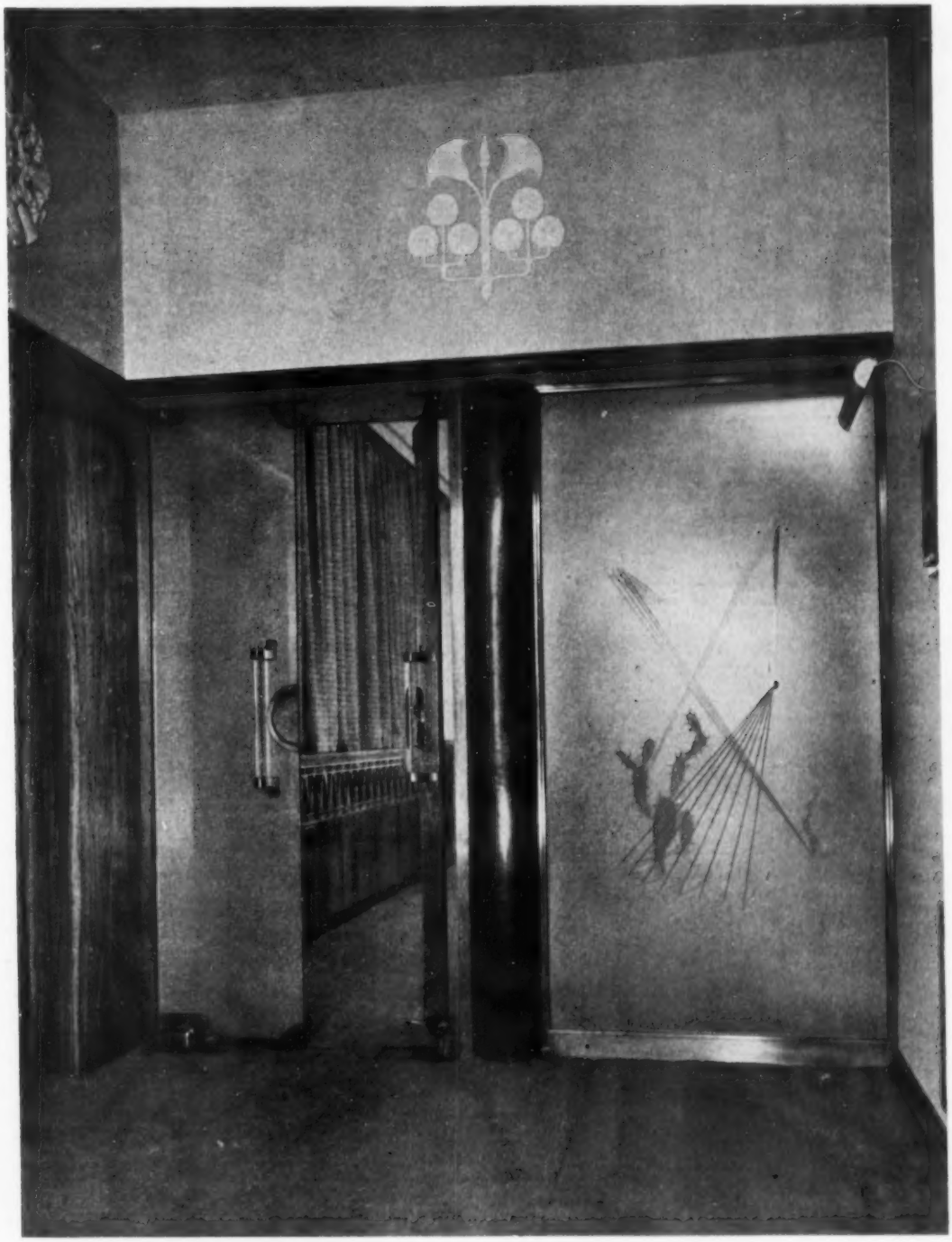

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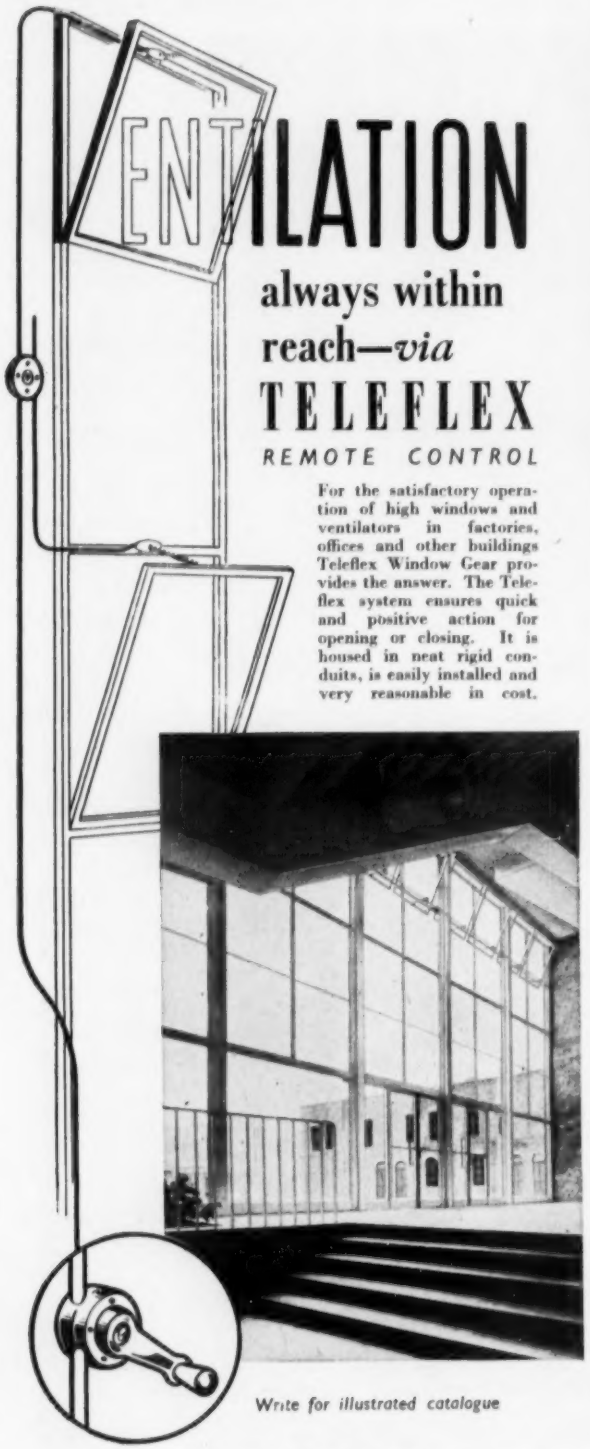

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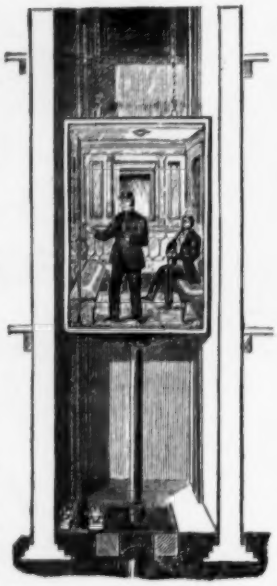

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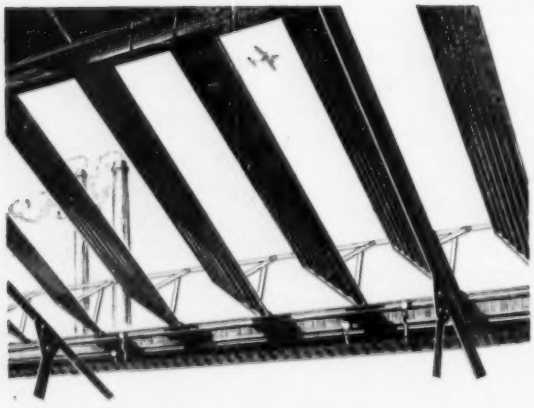

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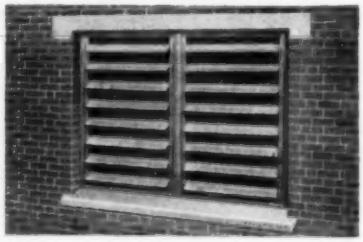

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LANGLEY personnel will be pleased to hear that the work which has caused them some discomfort during recent weeks, the asphalting of all the main "drags", which is being carried out by COVERITE (ASPHALTERS) LTD., Bridge Road, Wood Green, N.22, is nearing completion.

Although the present unpleasantness caused by the smoke and fumes from the contractor's mixing furnace has been a bit of a hardship, the knowledge that, when it is completed, many people's work will be made much easier has made it less difficult to bear.

In fact, some have been rather fascinated by this work, which is far from as simple as it looks. It takes about five years to acquire the skill of laying the asphalt mixture with the dexterity shown by the contractor's men, apart from all the experience required to mix the varying ingredients needed to meet the different demands and circumstances. In Langley's case, the aggregates used are fine grits, oil-resisting asphalt, bituminous pitch and special grindstone powder. Although laid at a temperature of 350 F., it is hard enough to carry 50 ton weights an hour afterwards. The advantages of this new surface were shown recently when a particularly heavy piece of machinery was being winched along over some old concrete flooring, which suffered considerable crumbling. As soon as the new surface was reached, however, no visible damage was seen and the movement was made much easier.

The longer this surface is used the smoother it becomes, resulting in less noise from the skids which are widely used. And there is no concrete dust rising from the endeavours of the janitors.

When the job is finished all surfaces which are subjected to heavy traffic will have been re-surfaced, a total area of about 7,500 yards.

... upholstery is as new, ... "Better Used Cars."

... Deposit. 1939 RENAULT 8 h.p. de ... saloon, one ...

WEST Germany established a ... in passenger ...

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In addition to the class of work upon which we have been commended in this article, we should like to remind you of other aspects of our business:—

Mastic Asphalt Roofing; Asphalt for Tanking and Roadways; Flexible Felt Roofing (Coloured Mineral Surface and Gritted Finishes); Coloured and Heavy-Duty Industrial Asphalt Flooring; Decorative Lino-Tile Flooring; Tarpaving and Tarmacadam Surfacing, Rubber Surfacing to Playgrounds, etc.

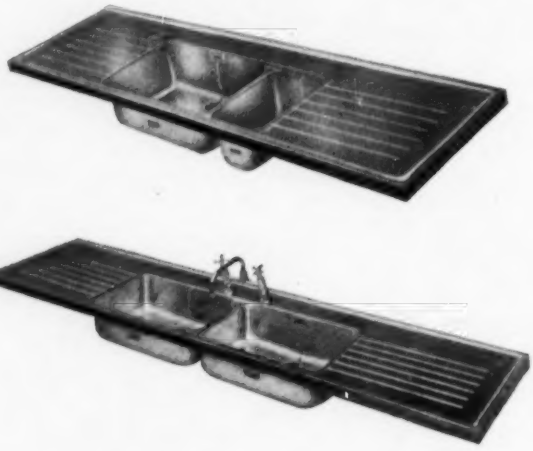
COVERITE (ASPHALTERS) LTD.

PALACE GATES,
BRIDGE ROAD,
WOOD GREEN, LONDON, N.22

Telephone: BOWes Park 7821/2

Stainless Steel Kitchen Sinks For 100 years

Don't get us wrong, we have not been making sinks for 100 years, but they will last that long. Incidentally we think we can claim to have been manufacturing stainless steel sinks longer than anyone else in this country.



PLAND

The Stainless Steel Sink Co. Ltd.

HEAD OFFICE
RING ROAD,
LOWER WORTLEY,
LEEDS, 12.
'Phone: Leeds 38711.

LONDON OFFICE
14, GT. PETER STREET,
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LONDON, S.W.1.
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SHUTTER CONTRACTORS LTD.
LINCOLN WORKS, ENFIELD, MIDDX., ENGLAND

Manufacturers of

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ROLLING SHUTTERS IN STEEL, WOOD, & ALUMINIUM ALLOY

FOR ALL TYPES OF BUILDINGS

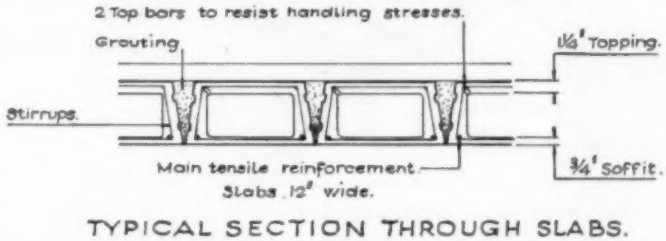
Approved Manufacturers to Fire Offices' Committee and London County Council Requirements

FLOOR AND ROOF SLABS

FABRICRETE PRODUCTS, LTD.
LITTLETON LANE, SHEPPERTON, MIDDX.
Telephone: CHERTSEY 2315 and 3593

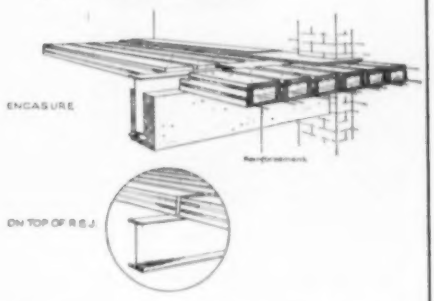
TRADE MARK BEACON

"BEACON" FLOOR and ROOF SLABS



TYPICAL SECTION THROUGH SLABS.

The "Beacon" Precast Floor and Roof Slabs have been used in the construction of all types of buildings for public authorities and private architects.



TYPICAL DETAILS OF BEARINGS.

The Advantages of this type of Construction are :—

(*a*) Speedy Construction.
(*b*) Strength with Lightness.
(*c*) Resistance to Fire and Sound Transmission.
(*d*) Absence of Shuttering.

● We welcome enquiries as to prices which will be found to compare very favourably with other forms of slab construction and would be pleased to assist in the preparation of schemes without any obligation whatsoever.

when there's a contract in the air . . .

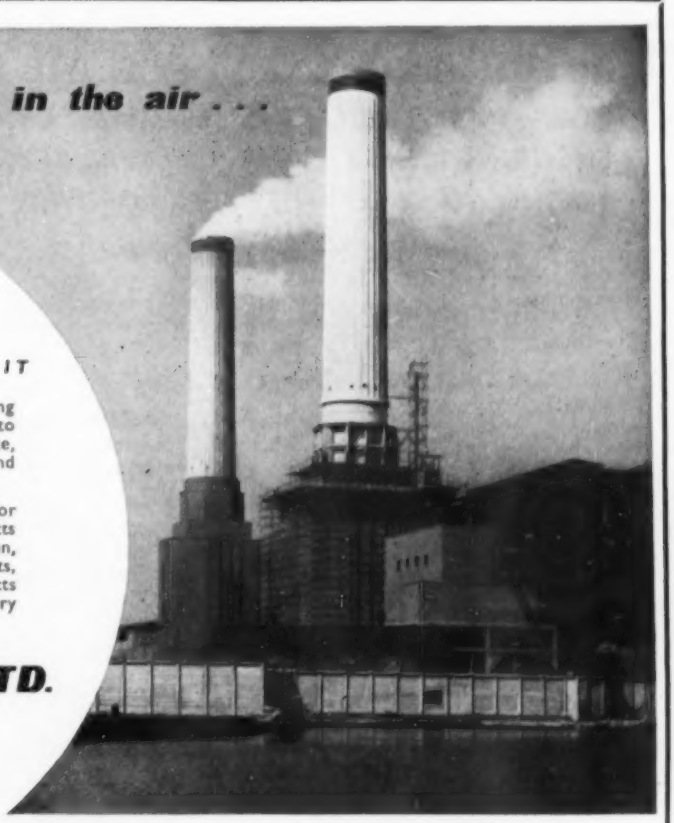
SPECIFY

STIC B

TO PROTECT IT—TO PRESERVE IT

Stic B Stone covering is a decorative and waterproofing treatment that can be applied by brush or spray to practically all surfaces, including new and old concrete, cement rendering, brickwork, plaster, wall boards and asbestos.

Our picture shows Brunswick Wharf Power Station, for which Stic B products were specified. Other contracts include London Airport, Brighton 'B' Power Station, Uskmouth Generating Station and Priory Court Flats, East Ham. Every assistance will be given to Architects and Builders regarding the use of our product on every kind of surface from New Concrete to Asbestos.

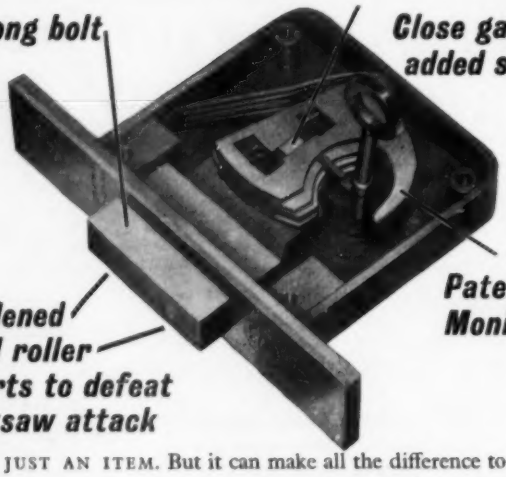


STIC B PAINT SALES LTD.

47, WHITEHALL, LONDON, S.W.1

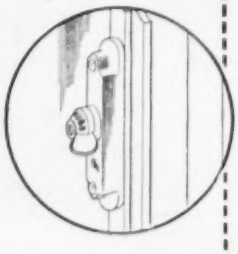
TELEPHONE: WHITEHALL 9958

ITEM: One door lock!


Extra strong bolt
Close gating for added security
Patent Monitor lever
Hardened steel roller inserts to defeat hacksaw attack

ANOTHER LITTLE ITEM

A recent example of our policy which may be useful to you is a simple lock for securing metal-framed windows. Please ask our representative to call and give you details of these and other Chubb security devices.



JUST AN ITEM. But it can make all the difference to your client—between security, for instance, and serious loss. Most people come to us in the end—it may be too late — for a lock they can rely on. Because Chubb locks are the outcome of a policy of continuous research to ensure the utmost security. So if you are tempted to make small economies by using weak, anonymous locks on back and front doors, please think again, and think of Chubb.

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BRANCHES AT: BIRMINGHAM · BRISTOL · EDINBURGH · GLASGOW · LIVERPOOL · MANCHESTER · NEWCASTLE · AND DUBLIN-EIRE

The BLAKEY PATENT METAL ANGLE BEAD

NOW HAS TWICE THE NUMBER OF PERFORATIONS ENSURING THAT THE PLASTER KEYS TO THE BRICK AND INTO THE APEX OF THE BEAD.

Here is something new and really efficient.

Vermin Proof.

Heavily Galvanised.

Much Cheaper than Cement Angles.

No Shrinkage as in Wood Angles.

A novice can fix with small patches of cement or a few nails if required.

Easily cut to any length.

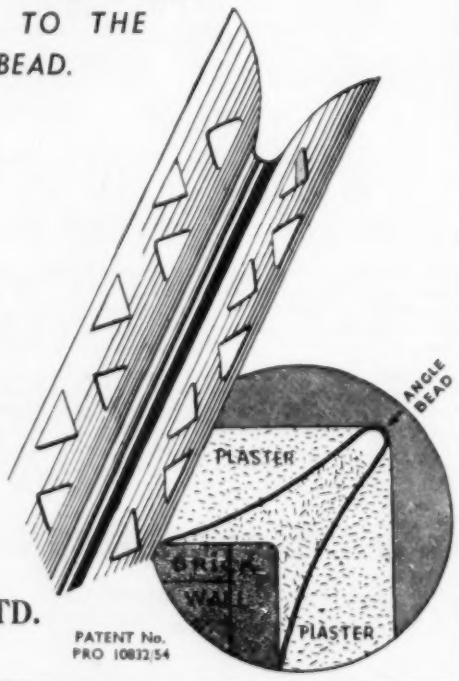
Almost impossible to damage a corner due to the **double** row of perforations.

Light but strong.

Makes a wonderfully neat angle which it is impossible to make with wood or cement.

There is a great saving in labour costs against those required to plug and fix Wood Angle Bead or to build up Cement Angles.

Illustrated Brochure with full details on request.



Est: 1850

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For the modern factory, specify

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New Factory at Basildon, Essex, for Marconi's Wireless & Telegraph Co. Ltd.

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Low initial cost.

Non-corrodible.

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Full range of industrial type gutters available in Valley, Northlight, Boundary Wall and Box patterns—manufactured in accordance with B.S.569.

Special sections can be made.

TURNERS ASBESTOS CEMENT CO LTD
A MEMBER OF THE TURNER & NEWALL ORGANISATION
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Simple Division

or
Substantial Addition
the answer's the same—

NSE

NON-VIBRATING
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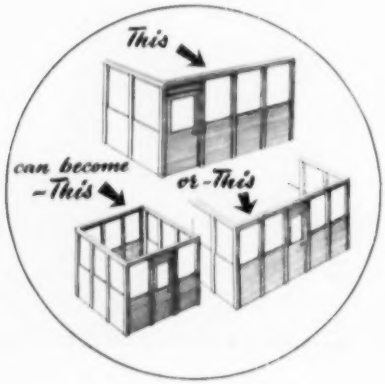

Whatever partitioning arrangement you have in mind, whether it be for a permanent or a temporary structure, rely on N.S.E. to carry out your plans at money-saving cost and without sacrifice of quality.

Write for fully-illustrated descriptive catalogue, which, in addition to giving details of N.S.E. Partitioning, features a wide range of equipment, including Shelving, Binning, Clothes Lockers, Filing Cabinets, Desks

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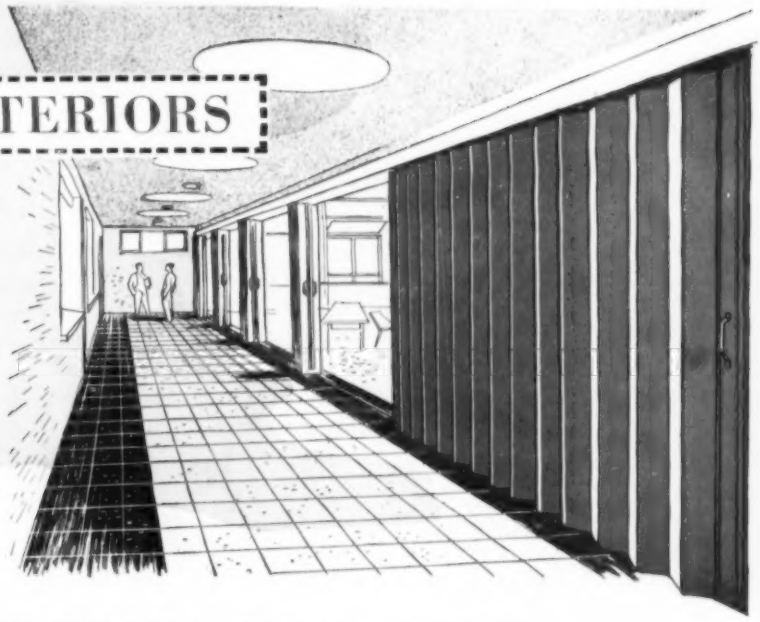
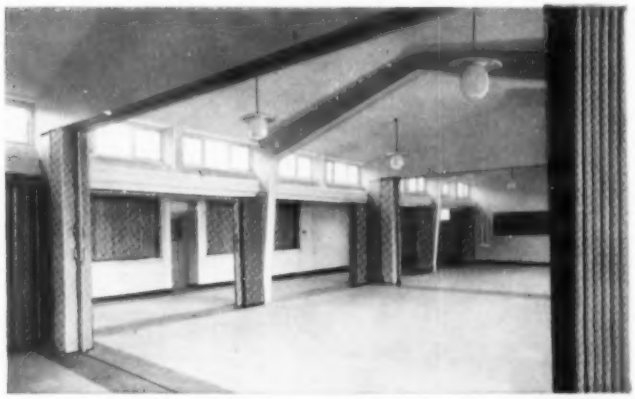
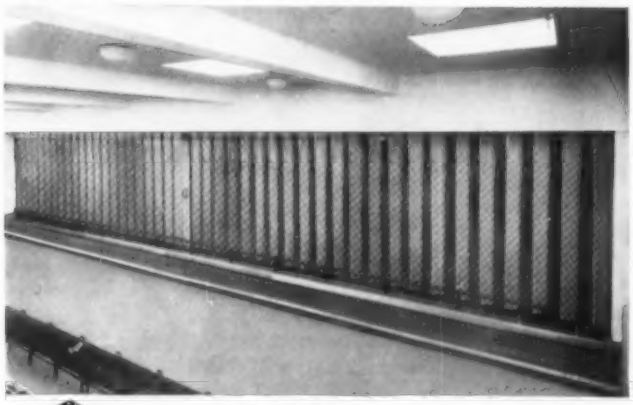
MODERN INTERIORS



demand the
MODERN FOLDING PARTITION





Bolton " Superfold " leathercloth covered collapsible partitions are robust and durable in construction, whilst being light and easy to handle. They offer smooth operation, attractive appearance, draught resistance and heat conservation, and the leathercloth covering, which is washable and readily interchangeable, can be supplied in a variety of shades to harmonise with any colour scheme.

Bolton " Superfold " partitions are fabricated from $\frac{5}{8}$" pickets together with suitable lattice bars. A special double-sided extruded aluminium alloy hinging strip is provided to accommodate the small section shutter plates which provide the internal support for the leathercloth. An overhead top track with ball bearing pulleys is fitted, and a single channel bottom track which can be eliminated if desired.

" Superfold " partitions are ideally suited for schools, hospitals, hotels, canteens, offices, ships, clubs, social centres, private houses, etc.

For further details send for our "Superfold" leaflet. We shall also be glad to send you, without obligation, a copy of our latest catalogue A.B. '54 which describes our complete range.

BOLTON COLLAPSIBLE
DOORS & GATES

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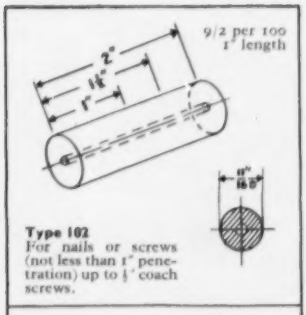
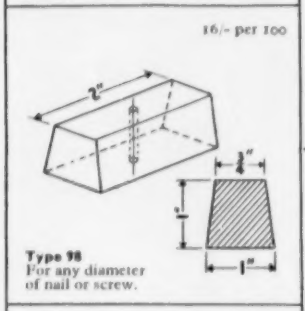
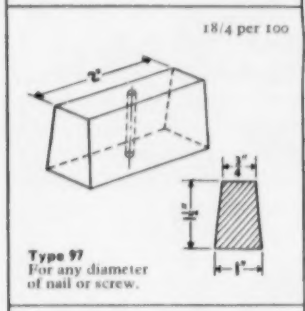
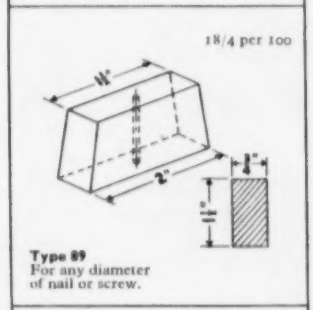
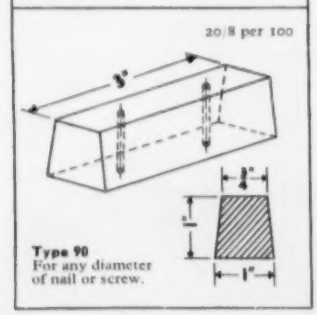
The Advantages of PHILPLUG Inserts











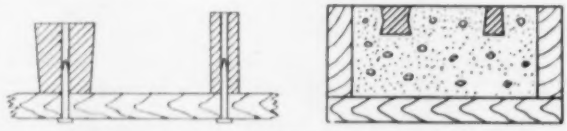
PRE-CAST IN CONCRETE, ARTIFICIAL STONE, TERRAZZO Etc.

for fixing metal windows, hinges switches, heating points, etc. etc.

The use of PHILPLUG INSERTS saves time, labour and money, with no delay in making holes, the Inserts being pre-cast at pre-determined points of fixing. They are made from asbestos fibres and cementatious powders, achieve a natural bond with concrete, will not shrink, and protect screws and nails from heat, damp and rust. Available in many shapes and sizes as fixing points for metal windows, door frames, skirtings, picture rails, hinges, switches, heating points, ceiling and wall boarding, also for fixings in concrete, lamp standards, posts, etc. PHILPLUG INSERTS are competitively priced and offer many advantages over the use of wood blocks.

METHODS OF FIXING PHILPLUG INSERTS INTO THE MOULD

Inserts are provided with ¼" diameter holes for fixing into moulds. Treat as hard wood blocks and pierce with bradawl or drill any part of the screwing face to provide entry for screw.



PHILPLUG INSERTS

Available in various shapes and sizes to cover any application.

- Are unaffected by heat or by damp.
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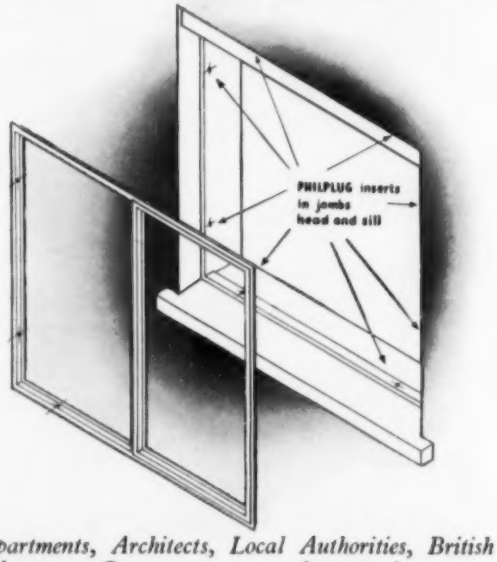
- Give suitable degree of tolerance for fixing.
- Allow screws to be withdrawn or inserted as often as is necessary.
- Provide a permanent thread once screw is inserted.
- Can be incorporated into all types of *in situ* work.
- Can be specified for use by manufacturers of all types of pre-cast work.



As specified by Government Departments, Architects, Local Authorities, British Railways, Metal Window Manufacturers, Contractors etc. at home and overseas.

PHILPLUG Inserts

MAKE LIGHT WORK OF WINDOW FIXING!

Please ask for our Technical Representative to call or ask for literature and samples of complete range for test purposes—

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SAVE YOUR SIGHT—BY BETTER LIGHT

ENTRANCE HALL *by courtesy of THE ADMINISTRATIVE STAFF COLLEGE*

It would be difficult to exaggerate the importance of good lighting in all walks of life, both for clear and comfortable vision and the preservation of good eyesight. For this reason we have always recommended the type of lighting that is glareless, shadowless and evenly diffused throughout, and the G.V.D. SYSTEM provides this in the most efficient, effective and economical manner, using the minimum of equipment necessary for the purpose.

The joy and comfort of really good lighting of this kind must be experienced to be believed. The above illustration shows an excellent example of this ideal type of lighting, and it should be noted that this large and lofty area is perfectly and charmingly lighted by only two fittings and there is only one lamp in each.

WE NEITHER USE NOR RECOMMEND FLUORESCENT LIGHTING, nor the very high intensities so prevalent to-day. In this connection it is not without significance that a recent report of the Ministry of Health discloses the fact that nearly 27,000,000 pairs of glasses were supplied during the first five years' work of the National Health Service.

The following are a few of the well-known concerns who are users of the G.V.D. LIGHTING SYSTEM:

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The above estate, comprising some 455 dwellings ranging from two-storey houses to eleven-storey 'Point' blocks of Flats, was recently completed by us for the London County Council.

The photographs illustrate the imposing elevations of the four 'Point' Blocks. Three of these blocks are eleven-storied, rising to some 100 feet, the other being eight-storied, which is approximately 80 feet high. The remaining twenty-one blocks of Flats are built in traditional style and are admirably inter-

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ACKROYDON ESTATE WANDSWORTH

mingled to give the most pleasing effect. Full amenities for the tenants are provided by six Shops, thirty-two Garages, four Laundries and a Club-house being incorporated in the estate.

Part of this estate was entered for the 1954 R.I.B.A. Housing Competition and was awarded the Gold Medal for the London Area.

The contract value was approximately £1,000,000 . 0 . 0, and was completed within the scheduled time of two years and nine months.

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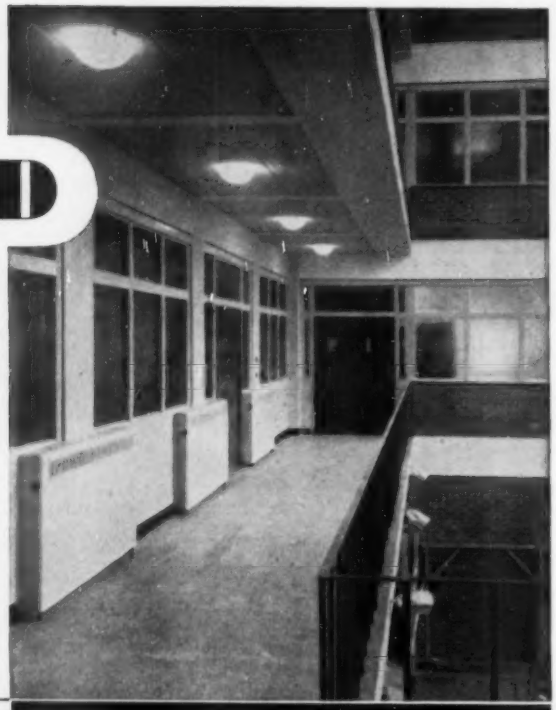
TO THE LATE KING GEORGE VI

CHATWOOD

flush surface steel partitions

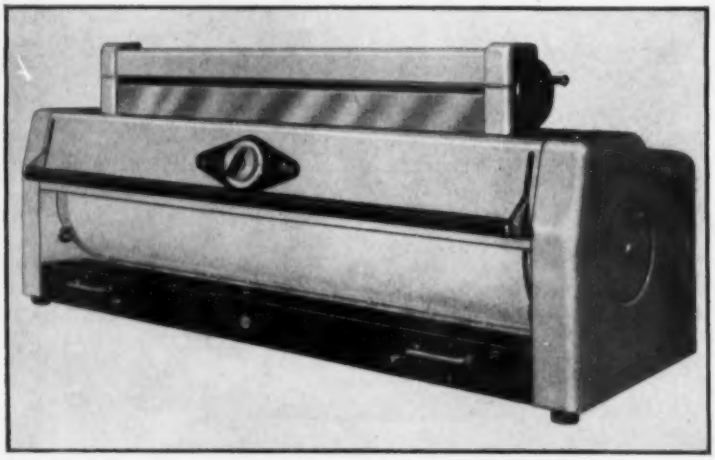
A product embodying all the enduring quality which has made Chatwood security equipment respected throughout the world for a hundred years.
The new Chatwood partitioning emphasises the features of easy erection and dismantling: unit construction, with flush surfaces; extreme dimensional adaptability, making it the ideal medium for space division; stove enamelled finish in customer's colour scheme—and the Chatwood ideal of Quality First.
Supplied to leading architects, companies and corporations.



Part of a Bristol Aeroplane Company installation is illustrated.

THE CHATWOOD SAFE AND ENGINEERING CO. LTD
Steel Partitioning Division: 3 Laurence Pountney Hill, London, E.C.4
Head Office: Shrewsbury, England. Branch Offices: Royal Exchange Arcade, Manchester 2, and 26 West Nile Street, Glasgow, C.1

For fine quality reproductions



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E. N. Mason and Sons Limited

Arclight Works, Colchester. Telephone: 5191.

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The APOLLO Combined Plan Printer and Developer

The APOLLO is a beautifully designed office machine for printing and developing first rate reproductions from transparent originals. The unit is compact, light in weight and is extremely simple to operate on top of a table or desk. The machine is ideal for making reproductions of any size up to 40" × 30" and it will operate from any ordinary electric circuit. The APOLLO is available to meet the needs of any business organization where fine quality reproductions are required. No skill is required to operate the machine. Prints are made and developed easily without noise, odour or untidiness. The modest price of this excellent piece of equipment is only £85.
Why not try the APOLLO on 7 days free trial in your office? Without obligation to you of course.

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SLIDING DOOR GEAR

FOR HOUSING ESTATES

FOR THE PRIVATE RESIDENCE

ELLARD Sliding Door Gear is ideally suited for use on large housing estates and for the distinctive private residence. ELLARD "Estate" Gear is silent—easy running—troublefree, and has elegant appearance. ELLARD "Radial" Gear, for garages and out-houses, provides smooth-running action, gives maximum space, and is easy to fix. Both these well-known types of ELLARD Door Gear are moderate in price and immediate delivery can be obtained from large ironmongers and builders' merchants throughout the country.

CLARKE ELLARD ENGINEERING COMPANY LTD

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R

OPERATION

SAFETY *

Give the lever a nudge with the elbow and out comes a comfortably warm spray neither too hot nor too cold. It stays warm because you are using a Leonard Thermostatic Mixing Valve — the valve that automatically mixes hot and cold water and holds the temperature steady. The thermostat in the Leonard valve levels off all the ups and downs and gives a flow of warm water as smooth, as steady, as even as the tide over a weir. Leonard Thermostatic Hot and Cold Water Mixing Valves are used in nearly all hospitals, and are specified more and more every day. They save water, save heat, save risk.

Sales and service everywhere.

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WALKER, CROSWELLER AND CO. LTD. CHELTENHAM

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All Glass Ceiling Fitting

with concealed plastic screw fitting suitable for conduit box fitting.

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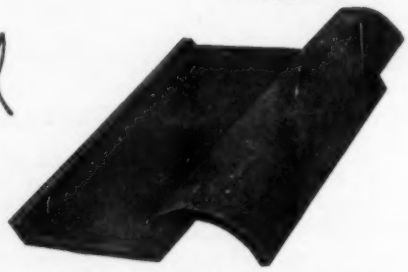

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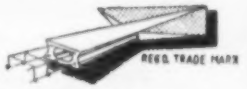

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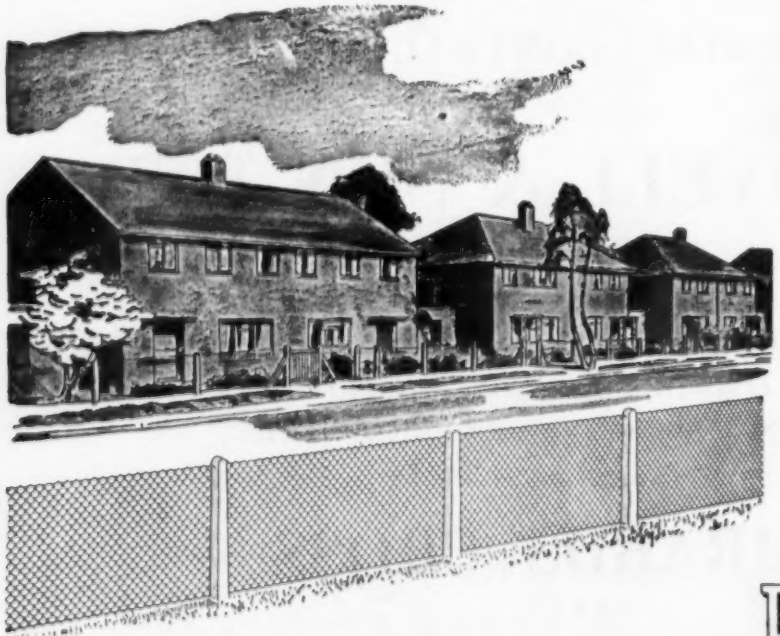

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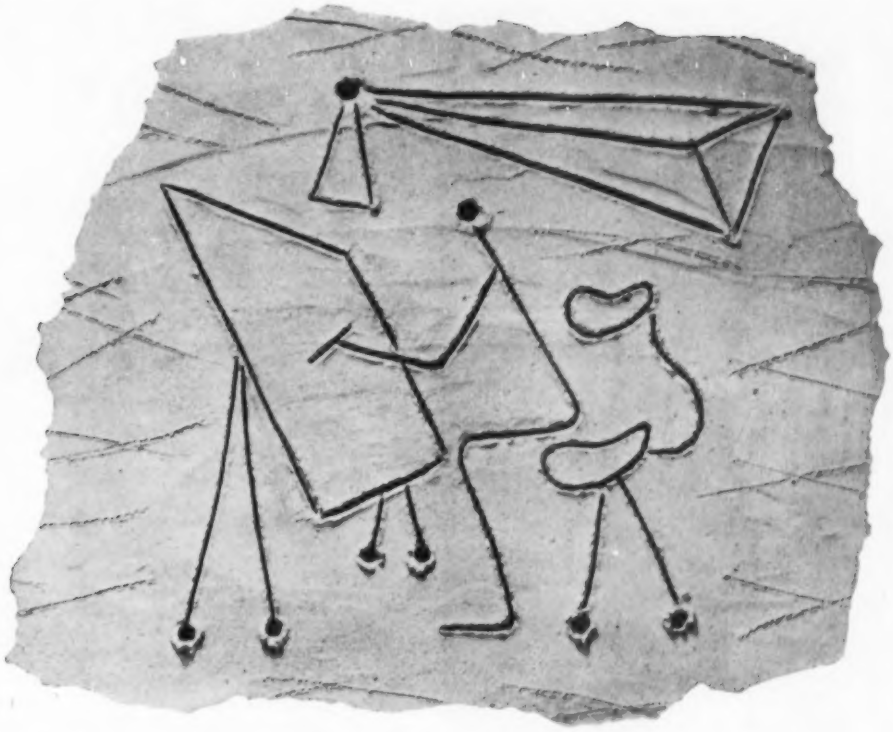

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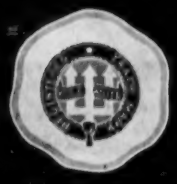

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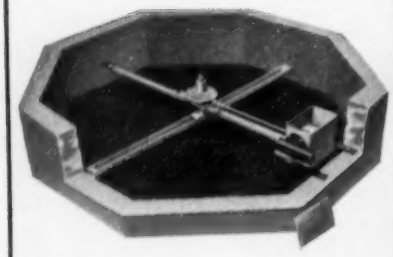

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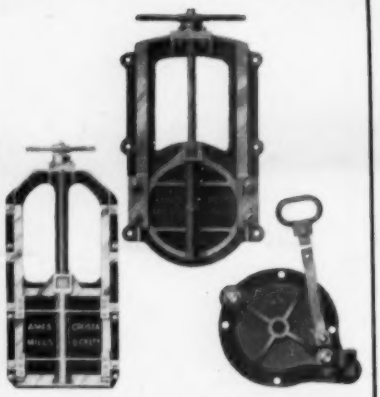

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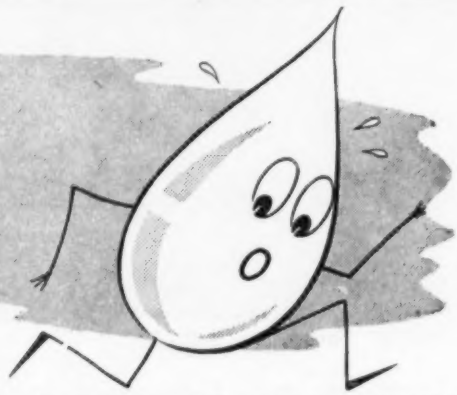

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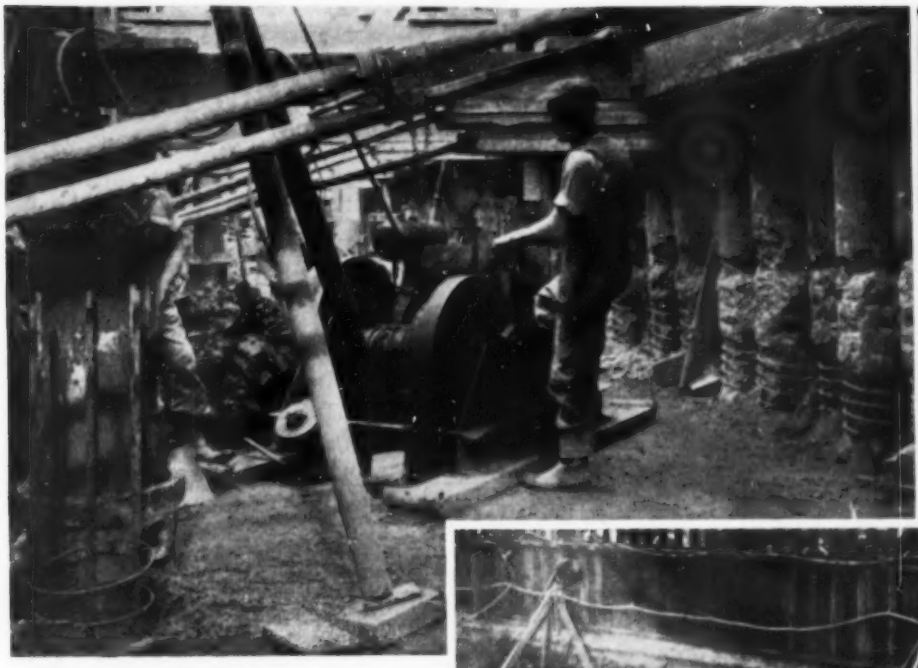

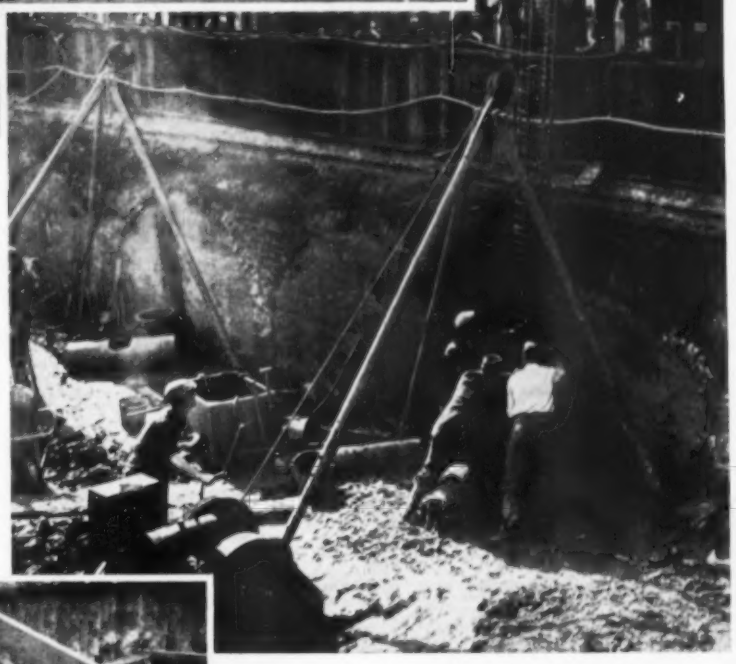

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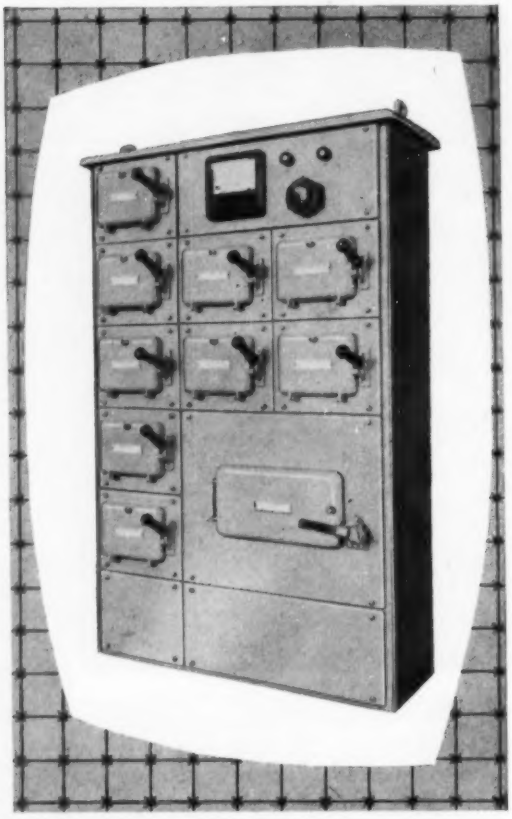

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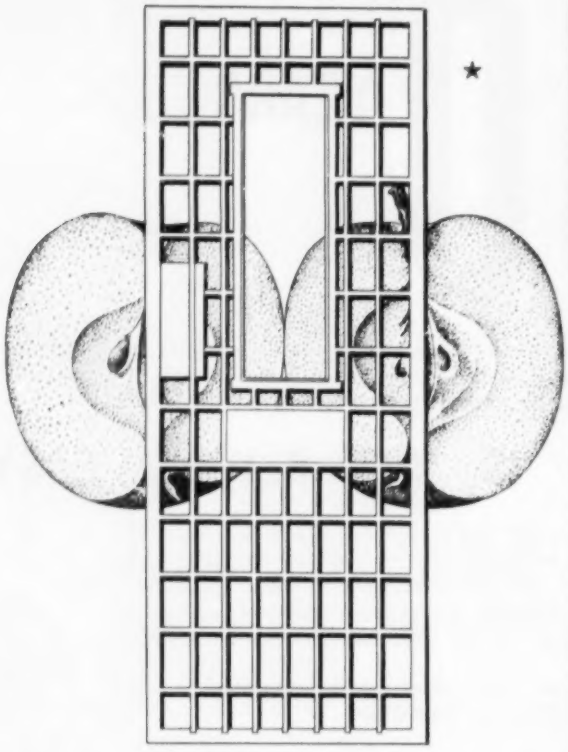

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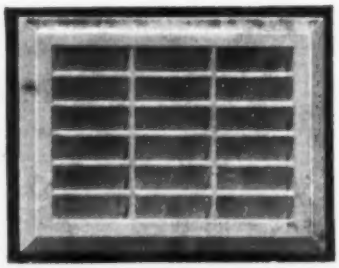

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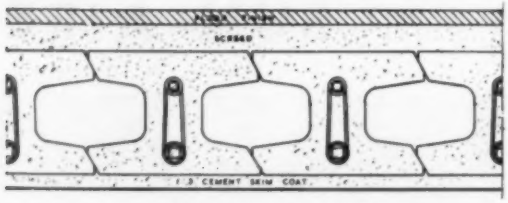

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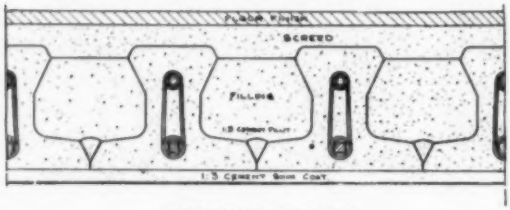

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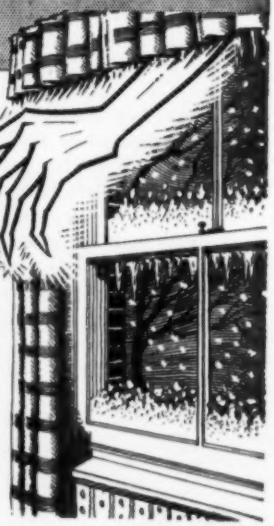

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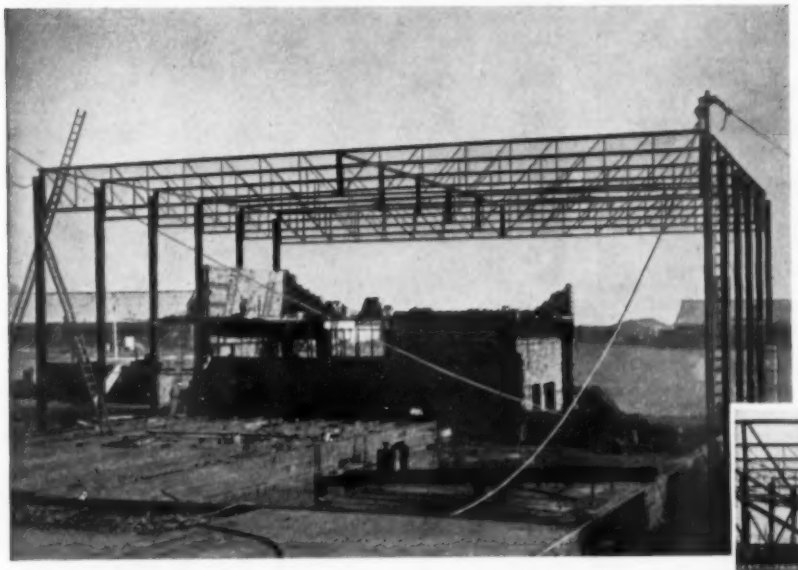

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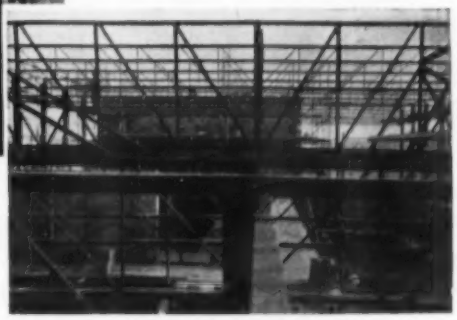

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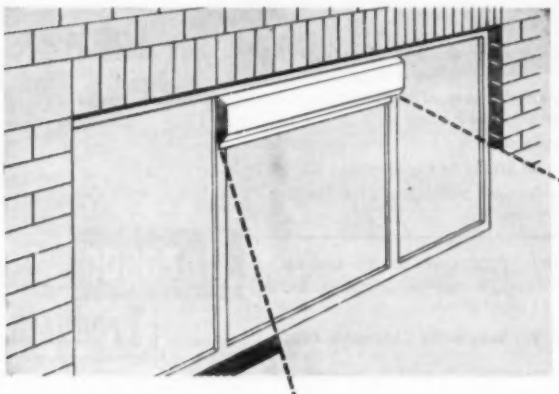

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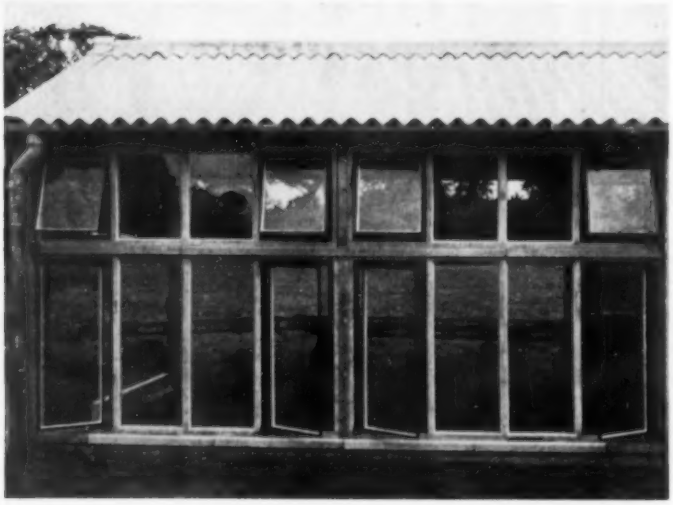

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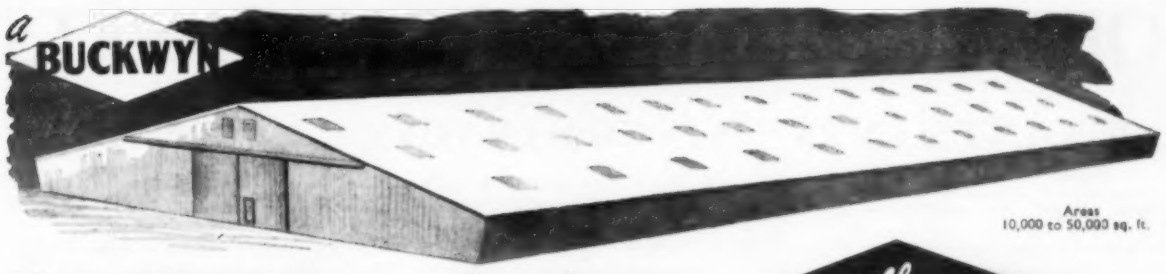

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APPOINTMENTS—contd.

URBAN DISTRICT OF FELTHAM.

TEMPORARY ARCHITECTURAL ASSISTANT required. Salary within Grade A.P.T. VI (£695-£760 per annum), plus London "weighting." Applicants must be Registered Architects.
Forms of application, obtainable from the undersigned, must be returned, accompanied by copies of two testimonials, not later than 8th November, 1954. Canvassing directly or indirectly will disqualify and applicants must disclose, in writing, whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

M. W. COUPE,
Clerk of the Council.

Council Offices,
Feltham, Middlesex. [8441

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the post of:—
PRINCIPAL ASSISTANT ARCHITECT (HOUSING).
A.P.T. Division, Grade IX (£840—£960).

APPLICANTS should be Associate Members of the R.I.B.A., and should have received a sound architectural training, preferably at a recognised School of Architecture. Considerable ability in contemporary architectural design and a sound knowledge of building construction and procedure are essential requirements, and applicants should have had practical experience of the administration of building contracts and the control of staff.
The successful applicant will be responsible under the direction of the Chief Assistant Architect (Housing) for the detailed organisation of the work of the normal Housing section including the progressing of large housing contracts.
The appointment will be subject to the National Conditions of Service as adopted by the City Council; to the provisions of the Local Government Superannuation Act, 1937, and to one month's notice on either side. The successful candidate will be required to pass a medical examination.
Applications stating age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials, or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, Not later than Monday, 8th November, 1954.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
16th October, 1954. [8445

BOROUGH OF COLCHESTER.

BOROUGH ENGINEER'S DEPARTMENT.

APPLICATIONS are invited for the appointment of TEMPORARY ARCHITECTURAL ASSISTANT. Candidates should have passed the Intermediate Examination of the R.I.B.A. or an equivalent examination and experience in Local Authority housing work will be an advantage. Salary in accordance with A.P.T. Grades II and III (£520—£595 per annum) according to qualifications and experience.
Applications stating age, qualifications and experience, accompanied by copies of two recent testimonials, must reach the Borough Engineer, 1, West Stockwell Street, Colchester, not later than November 6, 1954.
Canvassing will disqualify and candidates must state whether they are related to any member or senior officer of the Council.

N. CATCHPOLE,
Town Clerk.

Town Hall,
Colchester.
October 19, 1954. [8448

APPOINTMENTS—contd.

CORK CORPORATION

TEMPORARY ARCHITECT GRADE I REQUIRED

APPLICATIONS are invited from duly qualified persons for the position of TEMPORARY ARCHITECT, Grade I, in the City Architect's Department at a salary scale of £750 per annum by £25 to £900 per annum (plus temporary bonus—at present 30% on £750 and 20% on any excess over £750).

The appointment will be for a period of three years subject to satisfactory service. An appointee may be allowed to enter the scale at a point above the minimum according to qualifications and experience. Satisfactory practical experience of all phases of design and supervision of building work is an essential qualification. Experience in housing is desirable.

Applications, giving age and particulars of education, professional qualifications and experience, should reach the undersigned not later than Monday, 1st November, 1954. There is no prescribed Application Form.

Applicants will be required to attend in Cork for an interview at their own expense.

Canvassing directly or indirectly will prejudice the interests of applicants.

PHILIP MONAHAN,
City Manager and Town Clerk.

City Hall, Cork.
13th October, 1954. [8442

COUNTY BOROUGH OF BURY.

APPLICATIONS are invited from suitably qualified persons for the position of SENIOR QUANTITY SURVEYOR in the Borough Engineer's Department. Salary up to Grade A.P.T.VI (£695-£760).

The appointment is superannuable and subject to medical examination.

Applications stating age, details of training, qualifications and experience, together with the names and addresses of two persons to whom reference may be made, must reach me not later than 30th November, 1954.

EDWARD S. SMITH,
Town Clerk.

Town Hall,
BURY.
16th October, 1954.

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ARCHITECT'S Assistant, junior, required. Good draughtsman. Write stating age, experience, salary required.—T. Mortimer Burrows & Partners, 44, Bedford Row, Holborn, W.C.1. [8446

ARCHITECTURAL APPOINTMENTS VACANT—contd.

CHARTERED civil engineer requires architectural assistant; domestic, shops, hotels; temporary in first instance but good prospects.—Details of qualifications, experience and salary required, to S. W. Trueman, 105, Henver Rd., Newquay. [8436

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The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

DRAUGHTSMAN required for plant engineer's office; experienced in building layouts and general works' services; interesting work; 5-day week; good luncheon canteen and social club facilities.—Please write, giving age and full details of previous experience to The Personnel Officer, The de Havilland Engine Co., Ltd., Leavesden Aerodrome, nr. Watford, Herts. [8449

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ASSISTANT Quantity Surveyors required for staff of architect's department, Boots Pure Drug Co., Ltd., Nottingham. The appointments are pensionable and permanent after a probationary period, and successful applicants will be required to pass a medical examination. Applicants should have had experience in the preparation of quantities for both alterations and new buildings, specification writing for minor works and the settlement of final accounts.—Write, giving age, details of experience, training and salary required, to the Chief Architect, Boots Pure Drug Co., Ltd., Station Street, Nottingham, endorsing the envelope "Assistant Quantity Surveyor." [8431

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